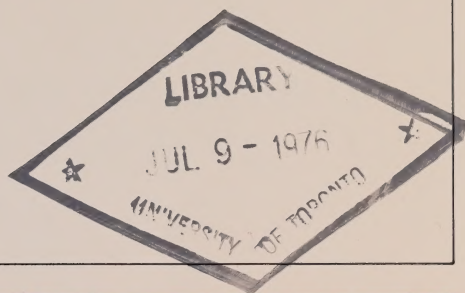


# **Working life tables for males in Canada and provinces**

1971

By K. S. Gnanasekaran  
and G. Montigny





STATISTICS CANADA

Census Field

Content and Analysis Branch

WORKING LIFE TABLES FOR MALES IN  
CANADA AND PROVINCES  
1971

by

K. S. Gnanasekaran and G. Montigny

Although this report was published as part of the Statistics Canada program for the development and use of statistics, the views expressed are those of the authors.

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## FOREWORD

Statistics Canada has a long tradition of supplementing census statistical reports with analytical studies which contribute to the advancement of present knowledge and understanding of socio-economic trends.

Based on the 1971 Census data, this study deals with the length of working life of males in Canada and the provinces. In addition, it provides valuable information on the pattern of entry into and retirement from the labour force. The authors, Dr. K.S. Gnanasekaran and Mr. G. Montigny, deserve appreciation for carrying out the present work in an area of considerable importance.

Although the study has been supported and published by Statistics Canada, responsibility for the findings is that of the authors.

PETER G. KIRKHAM,  
*Chief Statistician of Canada.*





## PREFACE

The labour force changes assume new significance in the context of an over-all aging of population being witnessed in the developed countries. This study purports to measure the length of working life and of retirement life in Canada and provinces, and to examine the trends during the past decade. Besides, an attempt is made to infer the potential changes in the working life of Canadian males in the coming years.

Working life tables are also of great value in understanding the components of labour force changes, i.e., number of persons who enter into and withdraw from the labour force owing to death or retirement. This study focuses on the national trends in labour force accession as well as retirement rates, and on provincial differences in these components.

The study benefited much from comments by experts in the field. We are particularly indebted to Dr. Sylvia Ostry for her advice which greatly enhanced the value of this study. Special gratitude is expressed to Professor Frank T. Denton who reviewed the whole manuscript and made many helpful comments. We are also thankful to census management, and in particular to Dr. A. Romaniuc and Mrs. Amy Kempster for their valuable suggestions and encouragement in completing this work.

In the preparation of this publication, the authors received help from many staff members of Statistics Canada, which is gratefully acknowledged. Special thanks are due to Miss Rosemary Doyle and Mrs. Maureen Freedman for editorial improvement, and to Mr. Terry Delaney, Mr. Wayne Livingstone, Mrs. Shelly Douglas and Mr. Sean Burrows for computer and research assistance on this project.

The authors accept full responsibility for any errors or deficiencies that may appear in the study. Although this report is published as part of Statistics Canada programme for the development and use of statistics, the views expressed are those of the authors.

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## CHAPTER 1

### INTRODUCTION

The term "working life" refers to the **average** number of years of life that a person may spend in the labour force. The duration or length of working life in conjunction with the total years of life reveals the average number of years spent outside the labour force or in "dependence". Both measures, the number of years spent in productive life or in dependence, bear important implications for the individual, the family and the nation as a whole, and in consequence, are considered valuable indicators of social and economic conditions within a country. Working life may be regarded as a good indicator of the economic-demographic situation in a country in the sense that it reflects the potential contribution of a person to the national economy. In contrast, dependency life serves as a useful indicator of a given socio-demographic situation in that it has a close bearing on the nation's social cost for education, child-care, care of the disabled, and the provision made for elderly persons during their retirement. Actuaries, economists and demographers have long been drawn toward the importance of the length and pattern of working life and in recent years, the length and pattern of dependency life, particularly of retirement, have taken on a new importance in the industrialized low-mortality countries.

Direct information on working life, however, is rarely collected nor, to our knowledge, is much effort made to compile relevant information from administrative files that may contain information on the period of work for a given category within the labour force. Consequently, working life is measured indirectly through the construction of working life tables. Tables of working life, in addition to providing measures of the length and pattern of working life, also yield valuable information related to labour force dynamics, that is, the rates of entry into and withdrawal from the labour force due to death or retirement.

Efforts to construct working life tables for Canada based upon the results of the 1961 Census, were first attempted by Frank Denton and Sylvia Ostry.<sup>1</sup> Closely following their efforts, the present study attempts to examine the recent changes in working life and to compare regional patterns that have emerged over the intercensal period 1961-71. Of significance to this question, the past decade has witnessed a greater emphasis upon the development of longitudinal or cohort data and their increasing use in the analysis of problems that have previously been investigated on a period basis. Recognizing these new advances in demographic and labour force research, this study additionally attempts to construct generation or cohort working life tables for Canada and to highlight the results drawn from these tables.

---

<sup>1</sup> Frank T. Denton and Sylvia Ostry, *Working Life Tables for Canadian Males* (Ottawa: The Queen's Printer, 1969).

The study is divided into two parts. In Part I, following a brief introduction, the long-term changes in the working life of men and the factors contributing to them are examined in Chapter 2. The working life table for Canadian males is presented in Chapter 3 for the year 1971. As indicated earlier, cohort working life tables are estimated in Chapter 4 and the results compared with the 1971 working life tables for males prepared in the preceding chapter. Chapter 5 describes provincial patterns and differences in male working life based upon the 1971 working life tables. Two technical appendices are also included to recapitulate the concepts and methods, and to describe the adjustments made in the labour force participation data from the 1971 Census. Part II presents the detailed tables of working life of men for Canada as a whole and for the provinces for the year 1971. Included here are the estimated cohort working life tables for Canada and the related generation (or cohort) life tables for males which were prepared for this study.



# **PART I**

## **METHODOLOGY AND ANALYSIS**



## CHAPTER 2

### CHANGES IN PATTERN OF WORKING LIFE

The determinants of working life are: (a) the mortality conditions in the country, (b) the age at entry into the labour force, and (c) the age at retirement from the labour force. The latter two factors are reflected in the changing pattern of labour force attachment and separation over time. At a given time, it can be assumed that the working life and its pattern are the result of the combined influences of mortality and labour force behaviour. Without going into great detail, it may be useful to summarize briefly the developments in these two variables over the past decades with a view to providing a background for the study of changes in the working life of males in Canada.

For many years, Canada has experienced a low mortality of less than ten deaths per thousand population.<sup>1</sup> Thus, as early as 1931, the expectation of life at

<sup>1</sup> For a detailed study, see K.S. Gnanasekaran, "Mortality Trends and Projections by Causes of Death in Canada, 1950-1990", *Harvard Actuarial Conference Papers*, Boston, 1973. Also Statistics Canada, *Technical Report on Population Projections for Canada and the Provinces, 1972-2001* (Ottawa: Information Canada, 1975), Chapter 4.

**TABLE 2.1. Average Life and Working Life Expectancy for Males,  
Canada, 1931 - 1986**

Year	At birth			At age 15		
	Average number of years of			Average number of years of		
	Life expectancy	Working life expectancy	Outside labour force	Life expectancy	Working life expectancy	In retirement
1931 . . . . .	60.0	39.6	20.4	53.4	48.0	5.4
1941 . . . . .	63.0	40.9	22.1	54.1	48.1	6.0
1951 . . . . .	66.3	41.9	24.4	55.4	47.9	7.5
1961 . . . . .	68.4	42.1	26.3	56.2	48.0	8.2
1971 . . . . .	69.3	43.7	25.6	56.3	47.3	9.0
1986:						
Estimate A . . . . .	70.2	44.6	25.6	56.5	47.7	8.8
Estimate B . . . . .	70.2	43.8	26.4	56.5	46.8	9.7

**Source:** Table 3.1 and Frank T. Denton and Sylvia Ostry, *op. cit.*, pp. 24-54; see text for assumptions regarding estimates for 1986.

birth was approximately 60 years for males as shown by Table 2.1 and 62 years for females.<sup>2</sup> Further reduction in mortality continued and the current expectation of life at birth averages about 69 years for males and 76 years for females,<sup>3</sup> that is, an increase of 9 and 14 years respectively in four decades. A significant aspect of this historical trend is that the bulk of the increases had occurred between 1931 and 1956, averaging an increase of 0.3 years per annum for males and 0.4 years for females. The improvement though not halted in later decades, did, however, relent considerably in the period 1956-71.

With respect to labour force trends, the participation rates of men have been steadily declining in most age groups since 1921 as shown in Chart 2.1. Males in the young age groups appear to continue their education in larger numbers than did their brothers ten years ago. The rising levels of family income and the greater number of scholarships and/or loans available are among the factors which now enable students to continue their higher education. The downtrend in labour force participation among the older males was particularly pronounced.<sup>4</sup>

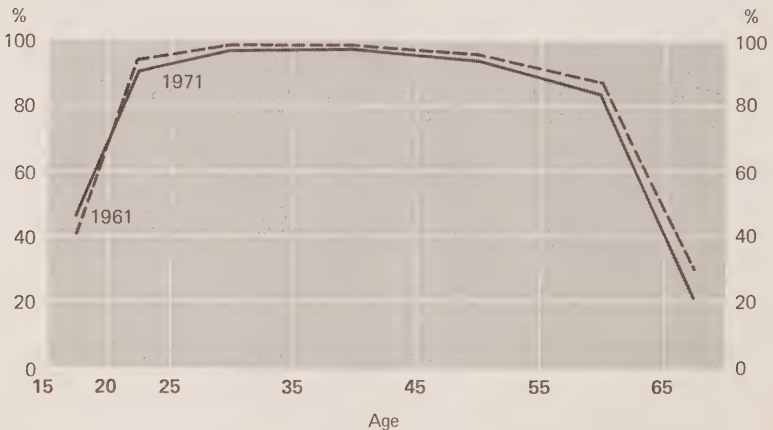
<sup>2</sup> *Ibid.*, p. 4.

<sup>3</sup> Statistics Canada, *Life Tables, Canada and Provinces, 1970-1972* (Ottawa: Information Canada, 1974), p. 13.

<sup>4</sup> K.S. Gnanasekaran, "The Labour Force", in CICRED, *The Population of Canada* (Ottawa: Statistics Canada, 1974), Chapter 5.

Chart 2.1

**Labour Force Participation Rates by Age,  
Males, Canada, 1961 and 1971**



Source: K.S. Gnanasekaran, "The Labour Force", in C.I.C.R.E.D., *The Population of Canada* (Ottawa: Statistics Canada, 1974), p. 100.

## Trend in Working Life

Against the background of the foregoing trends in mortality and male labour force participation, Table 2.1 presents the changes in the working life of males in Canada since 1931. In comparing these trends, it should be kept in mind that the estimates, particularly those for the earlier periods when the concept followed was not of the labour force but one of the gainful worker, may be relatively poor and, notwithstanding the adjustments made, may still suffer from errors due to qualitative differences in concepts.

During the period 1931-71, the length of working life changed considerably; at the beginning of this period, that is, in 1931, a man of 15 years could, on the average, expect to live another 53.4 years of which 48.0 years might be spent in the labour force and the remaining 5.4 years, outside the work force. By 1971, the life expectancy at age 15 had gone up by 2.9 years to 56.3 while the working life had declined to 47.3 years, thus leaving an average of 9.0 years spent outside the labour force. It should be stressed here, at the risk of repetition, that these figures are averages and a young person may never enter the labour force at all owing to disability or any other reasons and, in consequence, he may spend all his lifetime outside the labour force. Or, a person may die while employed and thus spend no time in retirement. Considering the recent decade 1961-71 which witnessed, on the one hand, a rapid decline in the participation rates of young men and, on the other, a rise in accident mortality occurring at the young ages, it may seem that the average life expectancy remained more or less the same in this period (see Table 2.1), while the working life declined from 48.0 years in 1961 to 47.3 years in 1971, thereby increasing the average number of years spent in retirement.

An examination of recent changes shows that the expectation of total life for males at age 15 was 56.3 years in 1971 as compared to 55.4 years in 1951, implying a slight increase of 0.9 years. For the same period, the expectation of working life declined for Canadian males from 47.9 years in 1951 to 47.3 years or by 0.6 years. This trend may be attributed to causes other than death. Indeed, had other factors remained unchanged, the expectation of working life would average about 49.0 years in 1971 indicating an increase of approximately one year owing to the mortality reductions that took place during these two decades.

This decline in working life expectancy became apparent in 1971. The downtrend, in fact, began after 1951. Thus, from 1951 to 1961, while the expectation of life increased by almost 0.8 years, the increase in work life expectancy was far less, about 0.1 year. This may be ascribed to the opposite trend in the labour force participation of men, a trend which has been consistently downward, due to the increased enrolment of the young in higher education and to the lower rate of participation of the old in the labour force. Consequently, during 1961-71, when the mortality rates showed little improvement from ages 15 onwards, the negative impact of the changes in participation rate outweighed any positive influence of mortality thereby causing a decline in

the working life expectancy. The labour force effect *per se* turns out at approximately minus 0.9 years in 1951-61 and minus 0.7 years in 1961-71 as shown in Table 2.2.

TABLE 2.2. Factors of Change in Working Life Expectancy of Males, Canada, 1951 - 1971 and 1971 - 1986

Period	Working life expectancy at the beginning of the period	Working life expectancy at the end of the period		Change in working life expectancy		
		Actual value	Assuming the worker rates obtained at the beginning of the period	Total	Due to mortality effect	Due to labour force participation effect
(1)	(2)	(3)	(4)	(5) = (3) - (2)	(6) = (4) - (2)	(7) = (3) - (4)
number in years						
1951 - 61 . . . . .	47.9	48.0	48.9	0.1	1.0	- 0.9
1961 - 71 . . . . .	48.0	47.3	48.0	- 0.7	0.0	- 0.7
1951 - 71 . . . . .	47.9	47.3	48.9	- 0.6	1.0	- 1.6
Estimate B:						
1971 - 86 . . . . .	47.3	46.8	47.7	- 0.5	0.4	- 0.9

Source: Tables 3.1 and 2.1 and unpublished data.

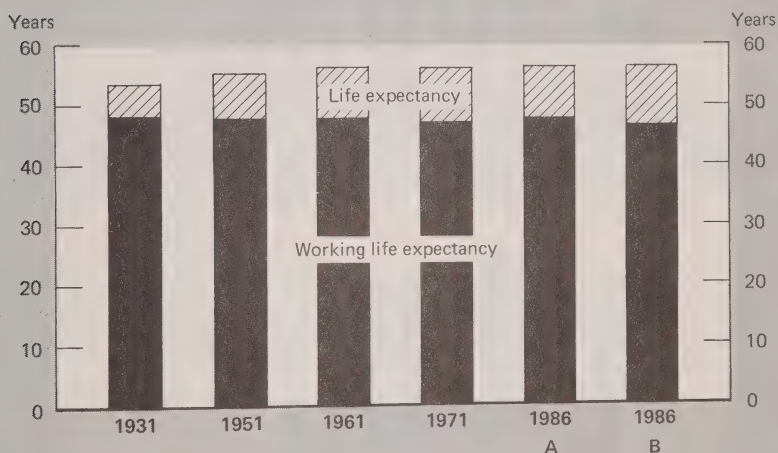
Looking ahead 15 years into the future, the length of working life may be expected to lie between 47.7 and 46.8 years. If the 1971 labour force participation rates continue unchanged and mortality declines, although at a lesser pace as the available projections imply, it is anticipated that the working life will increase from 47.3 years to 47.7 years or about one-half a year during the next fifteen years. At the same time, it appears that the total life expectancy at age 15 will increase very slightly to 56.5 years and consequently, the retirement period will shrink to 8.8 years. However, it is very unlikely that the pattern of economic activity will remain constant over this and the next decade. Past trends in participation rates have clearly shown a consistent downtrend in most ages although the extent of decline varied from one age to another. In general, the young and the old exhibited marked changes while the rates for the ages 30 to 54 dropped slightly. This declining pattern was also noticed during the recent decade 1961-71, and for the purpose of projections, it is assumed that the historical downtrend will continue in the future, but that the pace will slow down to one-half the decline experienced during 1961-71. Under this assumption, the decline will still be considerable, from 7% to 15% in 15 years in the ages 65 to 69 and from 3% to 5% in the ages 55 to 59. In the ages 20 to 54, the total decrease will be slight or less than 3% in the fifteen years from 1971 to 1986. For the ages below 20, it is assumed that the present participation level will continue



unchanged through 1986. Using these projected participation rates ( $1000 w_x$ ) and the life tables presented in Table 19, the length of working life is anticipated to be 46.8 years in 1986. This implies a continuation of the downtrend observed in recent years (i.e. 1961-71) and a further decline of half a year in the length of working life between 1971 and 1986. In terms of components, the effect of future mortality may be seen to raise the working life by 0.4 years (i.e. from 47.3 to 47.7), but this will be more than offset by the negative effect of future trends in labour force participation which, as calculated in Table 2.2, will reduce the working life by 0.9 years (i.e. from 47.7 to 46.8). This decrease may mean earlier retirement in the future, and an increase in the average length of retirement life from 9.0 years in 1971 to 9.7 years by 1986 (see Chart 2.2).

Chart 2.2

### Trends in Working Life Expectancy for Males, Canada, 1931-1986



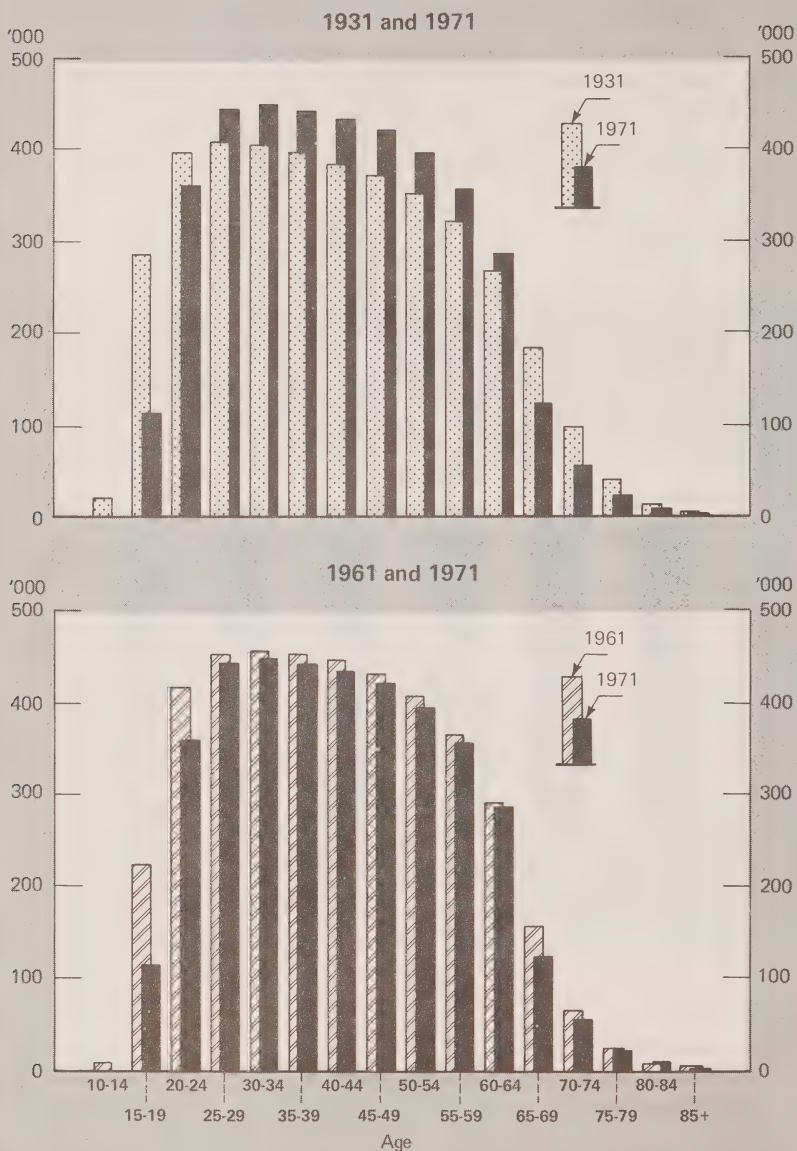
Source: Table 2.1

### Changes in the Stationary Labour Force

Data for the past decade reveal considerable changes in the pattern of labour force activity particularly among the young, resulting from increased school attendance and higher education. This section deals briefly with the effects of the long-term and recent changes on the pattern of working life, including the

Chart 2.3

### Stationary Labour Force by Five Year Age Groups, Males, Canada, 1931, 1961 and 1971



Sources: Table 3.1 and Frank T. Denton and Sylvia Ostry, *op. cit.*, pp. 24-25 and 48-49.

stationary labour force, the rates of entry into (or accession) and separation from the labour force.<sup>5</sup>

In Chart 2.3 which presents the stationary population and labour force associated with the working life tables for 1931, 1961 and 1971, it is seen that the stationary labour force increased over the long-term primarily because of the persistent decline in mortality. The only exceptions are the young (15 to 24) and the old (65 and over) age groups which showed declines over the long period. The reason for fewer males in the stationary labour force at the young ages could be attributed to increased school attendance while the reduced number of males in the stationary labour force at the old ages could be ascribed to the trend towards earlier retirement.

Against this backdrop of long-term trends, it is of significance to examine the changes in the past decade. Chart 2.3 which compares the stationary labour force according to the current working life tables of 1961 and 1971, indicates an opposite trend in recent years to that observed for the period 1931-71 taken as a whole. This recent trend reflects not only the persistent declines in the young and the old ages previously noted, but also reflects a decline in the stationary labour force in the prime working ages, 25 to 64. There could be two explanations for these developments. The long-term uptrend in the prime working ages between 1931 and 1971 is indicative of a substantial drop in mortality; in contrast, as the rate of decline in mortality slowed down in the more recent period, the downtrend for 1961-71 is a reflection of the decrease in labour force participation rates observed earlier in Chart 2.1. The implications of these trends in the stationary labour force are discussed below with reference to accession (or entry) and separation rates.

### **Trend in Accession Rates**

Over the years, the pattern of labour force accession has changed markedly as is evident from Chart 2.4. In the 1930's, the rate of entry among males 14 to 16 years of age was relatively high. This pattern shifted in favour of higher ages in the following decades, resulting in a rise in the average age at entry into the labour force. Thus, the average age at entry into the labour force was 16.2 years in 1931 in contrast to 18.6 years in 1961. The pattern of accession in 1971 differed considerably from the patterns in the 1950's and 1960's, reflecting a peak accession rate at age 17 and a mean age of entry into the labour force of about 19.2 years.

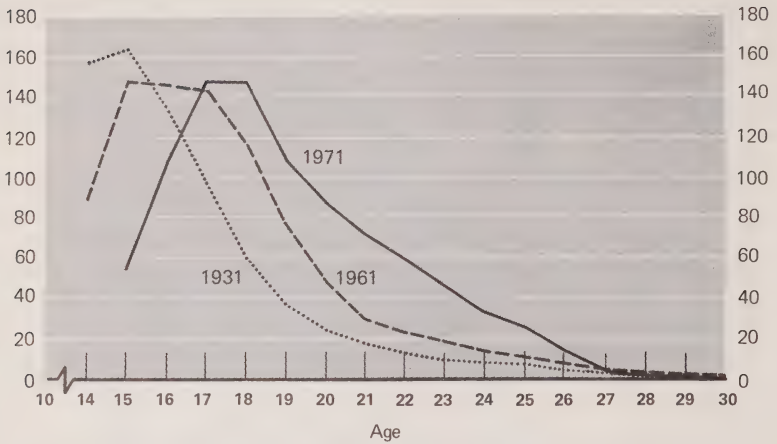
Several factors are responsible for the uptrend in the average age at labour force entry. The foremost among them being increased school attendance. The new entrants are now more qualified in terms of skills and educational attainment. Changes in the labour market resulting from industrialization and modernization can be another reason.

---

<sup>5</sup> The stationary labour force denotes the number of persons who will survive and be in the labour force at different ages out of the original 100,000 born alive. For the method of calculation, see Appendix A.

Chart 2.4

### Trends in Annual Rates of Accession to Labour Force, Males, Canada, 1931, 1961 and 1971



Sources: Table 3.1 and Frank T. Denton and Sylvia Ostry  
op. cit., pp 26 and 50.

### Trend in Separation Rates

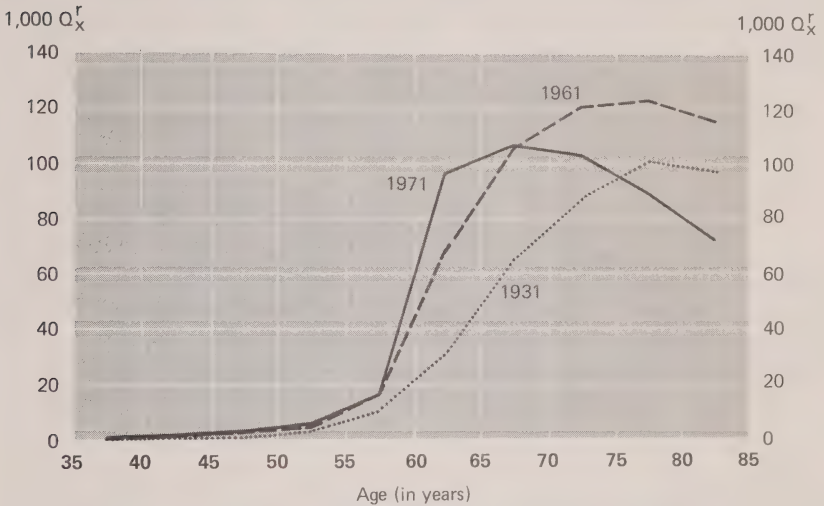
Another great value of the working life table lies in the information it provides on the pattern of labour force separations. The annual rates of separation which are shown in Chart 2.5 reflect the pattern of mortality changes in this country, especially those occurring at the older ages and the trend in recent decades toward a lower age of retirement.

Rates of withdrawal due to death follow a regular pattern consistent with the mortality curve. This pattern represents a steady rise in separation rates with advancing age. Over the period under review, the rates have declined slightly at every age. Until the age of 54, mortality is the more important factor, accounting for approximately two out of three withdrawals from the labour force. From age 55, however, causes other than mortality, are responsible for a large proportion of losses from the work force. This becomes particularly pronounced in the age group 60 - 64 with an annual retirement rate of 96.4 per thousand in 1971, compared to a loss of 22.8 per thousand resulting from mortality. Comparison of these separation rates over the period 1931-71 reveals striking developments bearing great implications for society. In 1931, the annual retirement rate was 30.6 per thousand. This rate has since more than doubled to 69.5 in 1961, and, in

the last ten years, increased sharply to 96.4 per thousand, reflecting a substantially earlier average age of retirement. Thus, the mean age at retirement decreased over the last ten years from 65.1 years in 1961 to 60.1 years in 1971.

Chart 2.5

**Trends in Annual Rates of Retirement from  
the Labour Force by Age, Males, Canada, 1931-1971**



Sources: Table 1 and Frank T. Denton and Sylvia Ostry,  
op. cit. pp. 26 and 50.





## CHAPTER 3

### CURRENT WORKING LIFE TABLE FOR MALES, 1971

Table 3 presents a detailed current working life table for Canadian males based upon mortality and labour force participation rates on a period basis (i.e. 1971) and on the methodology described in technical Appendix A. As pointed out previously, the working life table is a valuable tool in the study of labour force behaviour. Some of the important results are highlighted here together with inferences drawn regarding the dynamic aspects of the Canadian labour force. These aspects are: the rate of entry into the labour force, the rate of loss owing to mortality, and the rate of retirement from the labour force by age. The working life table additionally yields a measurement of the stationary labour force and as true of its counterpart in the life table, it is a valuable information for further analysis.

#### Stationary Population and Labour Force<sup>1</sup>

Under the 1971 mortality situation, with no change in the future, the number of males who could reach each year of age out of 100,000 born alive, appears in Column 4 of Table 3.1. For instance, the number attaining 15 years of age, which is taken as the lower age bound for the labour force, would be 97,078 ( $L_x$  value). This implies that roughly 3% of the initial population of 100,000 would die without entering the labour force.

Of the survivors to age 15, a small fraction (39 per thousand) is expected to be in the labour force, the remainder is expected to be in the educational system. The stationary labour force curve which is depicted in Chart 3.1, reaches its peak in the "twenties" when most young men begin work, and closely follows the stationary population from early thirties to mid-fifties. This segment represents the prime working ages when all men with the exception of the physically or mentally disabled, are normally in the work force. At age 55, about 75,148 (or 75.1%) of the group of 100,000 males born alive could be expected to be in the labour force. After the mid-fifties, the stationary labour force curve shown in Chart 3.1 descends more rapidly than does the stationary population curve since men begin to retire in increasing numbers from the work force. Thus, the number of men from the initial group who would be in the labour force, is seen to drop sharply in Column 8 of Table 3.1 to 64,008 (or 64.0%) at age 60 and to 32,433 at age 65. By age 75, only 6.6% of the initial cohort of men would remain in the labour force.

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<sup>1</sup> For definition of these terms, see footnote 2 of Section 2 and Appendix A.

TABLE 3.1. Current Working Life Table for Males in Canada, 1971

No.	Age	Labour force per 1,000 popu- lation	Number living of 100,000 born alive			Expected years of life at exact age x	Number in labour force of 100,000 born alive		
			At exact age x	In year of age x	In year of age x and all later years		At exact age x	In year of age x	In year of age and all years
	x	1,000 w <sub>x</sub>	lx	Lx	Tx	<sup>o</sup> ex	lw <sub>x</sub>	Lw*x	Tw <sub>x</sub>
	1	2	3	4	5	6	7	8	9
1	15 years . . . . .	39	97,129	97,078	5,471,066	56.33	92,462	92,419	4,373,472
2	16 " . . . . .	94	97,027	96,965	5,373,988	55.39	92,365	92,311	4,281,053
3	17 " . . . . .	202	96,903	96,833	5,277,023	54.46	92,248	92,185	4,188,742
4	18 " . . . . .	350	96,763	96,687	5,180,190	53.53	92,115	92,046	4,096,557
5	19 " . . . . .	497	96,611	96,529	5,083,503	52.62	91,971	91,896	4,004,511
6	20 " . . . . .	606	96,447	96,361	4,986,974	51.71	91,816	91,736	3,912,615
7	21 " . . . . .	693	96,275	96,187	4,890,613	50.80	91,653	91,570	3,820,879
8	22 " . . . . .	765	96,098	96,008	4,794,426	49.89	91,485	91,400	3,729,309
9	23 " . . . . .	824	95,919	95,831	4,698,418	48.98	91,316	91,232	3,637,909
10	24 " . . . . .	870	95,743	95,659	4,602,587	48.07	91,150	91,068	3,596,677
11	25 " . . . . .	904	95,575	95,497	4,506,928	47.16	90,991	90,914	3,455,609
12	26 " . . . . .	929	95,418	95,344	4,411,431	46.23	90,841	90,768	3,364,695
13	27 " . . . . .	943	95,270	95,199	4,316,087	45.30	90,699	90,630	3,273,927
14	28 " . . . . .	946	95,128	95,057	4,220,888	44.37	90,562	90,495	3,183,297
15	29 " . . . . .	949	94,987	94,916	4,125,830	43.44	90,427	90,360	3,092,802
16	30 " . . . . .	950	94,845	94,773	4,030,914	42.50	90,292	90,224	3,002,442
17	31 " . . . . .	952	94,701	94,627	3,936,140	41.56	90,154	90,085	2,912,218
18	32 " . . . . .	952	94,553	94,477	3,841,513	40.63	90,008	89,932	2,822,133
19	33 " . . . . .	952	94,400	94,320	3,747,036	39.69	89,862	89,793	2,732,201
20	34 " . . . . .	951	94,240	94,156	3,652,717	38.76	89,667	89,542	2,642,408
21	35 " . . . . .	950	94,072	93,984	3,558,560	37.83	89,413	89,285	2,552,865
22	36 " . . . . .	949	93,896	93,802	3,464,576	36.90	89,151	89,018	2,463,580
23	37 " . . . . .	948	93,707	93,605	3,370,775	35.97	88,878	88,738	2,374,561
24	38 " . . . . .	947	93,504	93,392	3,277,169	35.05	88,590	88,442	2,285,823
25	39 " . . . . .	946	93,280	93,158	3,183,779	34.13	88,284	88,127	2,197,380
26	40 " . . . . .	945	93,035	92,900	3,090,620	33.22	87,958	87,790	2,109,252
27	41 " . . . . .	944	92,764	92,615	2,997,720	32.32	87,609	87,429	2,021,461
28	42 " . . . . .	942	92,466	92,302	2,905,105	31.42	87,188	86,948	1,934,032
29	43 " . . . . .	941	92,138	91,959	2,812,802	30.53	86,740	86,533	1,847,083
30	44 " . . . . .	939	91,780	91,585	2,720,843	29.65	86,265	85,998	1,760,549
31	45 " . . . . .	936	91,390	91,179	2,629,258	28.77	85,671	85,344	1,674,550
32	46 " . . . . .	934	90,967	90,735	2,538,079	27.90	85,045	84,746	1,589,206
33	47 " . . . . .	931	90,504	90,250	2,447,344	27.04	84,384	84,023	1,504,459
34	48 " . . . . .	928	89,996	89,716	2,357,094	26.19	83,639	83,256	1,420,436
35	49 " . . . . .	926	89,437	89,129	2,267,374	25.35	82,894	82,533	1,337,179

TABLE 3.1. Current Working Life Table for Males in Canada, 1971

Expected years of working life at exact age $x$	Expected years of retirement life at exact age $x$	Accession to labour force		Separation from the labour force						No.
				Total		Due to death		Due to causes other than death		
		Number	Rate per 1,000 popu- lation	Number	Rate per 1,000 in labour force	Number	Rate per 1,000 in labour force	Number	Rate per 1,000 in labour force	
$e^o_{wx}$	$e^o_{rx}$		$1,000 A_x$		$1,000 Q^s_x$		$1,000 Q^d_x$		$1,000 Q^r_x$	
10	11	12	13	14	15	16	17	18	19	
47.30	9.03	5,330	54.90	107	1.16	107	1.16	—	0	1
46.35	9.04	10,463	107.85	126	1.36	126	1.36	—	0	2
45.41	9.05	14,312	147.78	139	1.51	139	1.51	—	0	3
44.47	9.06	14,193	146.77	150	1.63	150	1.63	—	0	4
43.54	9.08	10,502	108.82	160	1.74	160	1.74	—	0	5
42.61	9.10	8,364	86.85	166	1.81	166	1.81	—	0	6
41.69	9.11	6,916	71.87	170	1.86	170	1.86	—	0	7
40.76	9.13	5,655	58.90	168	1.84	168	1.84	—	0	8
39.84	9.14	4,399	45.92	163	1.79	163	1.79	—	0	9
38.91	9.16	3,243	33.95	154	1.69	154	1.69	—	0	10
37.98	9.18	2,387	24.98	147	1.60	147	1.60	—	0	11
37.04	9.19	1,335	13.99	138	1.52	138	1.52	—	0	12
36.10	9.20	286	3.00	135	1.49	135	1.49	—	0	13
35.15	9.22	285	3.00	134	1.48	134	1.48	—	0	14
34.20	9.24	190	2.00	136	1.51	136	1.51	—	0	15
33.25	9.25	95	1.00	139	1.54	139	1.54	—	0	16
32.30	9.26	—	0.0	143	1.59	143	1.59	—	0	17
31.35	9.28	—	0.0	149	1.66	149	1.66	—	0	18
30.40	9.29	—	0.0	251	2.79	156	1.74	95	1.05	19
29.47	9.29	—	0.0	258	2.88	164	1.83	94	1.05	20
28.55	9.28	—	0.0	267	2.99	173	1.94	94	1.05	21
27.63	9.27	—	0.0	280	3.15	187	2.10	93	1.05	22
26.72	9.25	—	0.0	295	3.33	201	2.27	94	1.05	23
25.80	9.25	—	0.0	315	3.56	221	2.50	94	1.05	24
24.89	9.24	—	0.0	337	3.82	244	2.77	93	1.06	25
23.98	9.24	—	0.0	362	4.12	270	3.07	92	1.06	26
23.07	9.25	—	0.0	480	5.49	295	3.38	185	2.11	27
22.18	9.24	—	0.0	415	4.77	323	3.71	92	1.06	28
21.29	9.24	—	0.0	536	6.18	351	4.06	185	2.12	29
20.41	9.24	—	0.0	654	7.61	381	4.43	273	3.19	30
19.55	9.22	—	0.0	597	7.00	415	4.86	182	2.13	31
18.69	9.21	—	0.0	724	8.54	453	5.34	271	3.20	32
17.83	9.21	—	0.0	766	9.12	497	5.91	269	3.21	33
16.98	9.21	—	0.0	723	9.68	544	6.54	179	2.15	34
16.13	9.22	—	0.0	1,041	12.61	597	7.23	444	5.38	35

**TABLE 3.1. Current Working Life Table for Males in Canada, 1971 - Concluded**

No.	Age	Labour force per 1,000 population	Number living of 100,000 born alive			Expected years of life at exact age $x$	Number in labour force of 100,000 born alive		
			At exact age $x$	In year of age $x$	In year of age $x$ and all later years		At exact age $x$	In year of age $x$	In year of age and all years
	$x$	1,000 $w_x$	$Lx$	$Lx$	$Tx$	$e^o_x$	$lw_x$	$Lw^*x$	$Tw_x$
	1	2	3	4	5	6	7	8	9
1	50 years . . . . .	921	88,821	88,483	2,178,249	24.52	82,013	81,493	1,254,645
2	51 " . . . . .	915	88,145	87,774	2,089,766	23.71	80,903	80,313	1,173,152
3	52 " . . . . .	908	87,404	86,999	2,001,992	22.91	79,654	78,995	1,092,838
4	53 " . . . . .	902	86,594	86,154	1,914,993	22.11	78,353	77,711	1,013,843
5	54 " . . . . .	898	85,714	85,238	1,828,839	21.34	77,127	76,540	936,132
6	55 " . . . . .	892	84,761	84,247	1,743,601	20.57	75,846	75,148	859,588
7	56 " . . . . .	885	83,733	83,178	1,659,354	19.82	74,380	73,613	784,440
8	57 " . . . . .	873	82,623	82,022	1,576,175	19.08	72,609	71,605	710,828
9	58 " . . . . .	858	81,422	80,772	1,494,153	18.35	70,453	69,302	639,222
10	59 " . . . . .	841	80,122	79,420	1,413,381	17.64	68,047	66,792	569,920
11	60 " . . . . .	821	78,719	77,964	1,333,961	16.95	65,400	64,008	503,128
12	61 " . . . . .	796	77,210	76,399	1,255,997	16.27	62,411	60,814	439,119
13	62 " . . . . .	766	75,589	74,722	1,179,597	15.61	59,025	57,237	378,306
14	63 " . . . . .	740	73,855	72,930	1,104,875	14.96	55,602	53,968	321,069
15	64 " . . . . .	689	72,006	71,025	1,031,945	14.33	51,452	48,936	267,101
16	65 " . . . . .	470	70,044	69,007	960,919	13.72	40,684	32,433	218,164
17	66 " . . . . .	420	67,971	66,878	891,912	13.12	30,261	28,089	185,731
18	67 " . . . . .	376	65,785	64,636	825,034	12.54	26,196	24,303	157,642
19	68 " . . . . .	336	63,486	62,283	760,399	11.98	22,615	20,927	133,339
20	69 " . . . . .	300	61,081	59,828	698,115	11.43	19,432	17,948	112,412
21	70 " . . . . .	265	58,575	57,276	638,287	10.90	16,562	15,176	94,463
22	71 " . . . . .	238	55,977	54,634	581,011	10.38	14,089	13,003	79,285
23	72 " . . . . .	213	53,291	51,906	526,377	9.88	12,029	11,056	66,282
24	73 " . . . . .	191	50,522	49,102	474,471	9.39	10,217	9,378	55,226
25	74 " . . . . .	172	47,682	46,235	425,369	8.92	8,665	7,952	45,848
26	75 " . . . . .	152	44,788	43,321	379,133	8.47	7,268	6,585	37,895
27	76 " . . . . .	138	41,854	40,372	335,813	8.02	6,078	5,571	31,311
28	77 " . . . . .	124	38,891	37,400	295,440	7.60	5,104	4,638	25,739
29	78 " . . . . .	112	35,910	34,420	258,040	7.11	4,246	3,855	21,102
30	79 " . . . . .	102	32,930	31,453	223,620	6.79	3,531	3,208	17,247
31	80 " . . . . .	93	29,976	28,522	192,167	6.41	2,930	2,653	14,038
32	81 " . . . . .	85	27,068	25,648	163,645	6.05	2,416	2,180	11,386
33	82 " . . . . .	79	24,227	22,851	137,998	5.70	1,992	1,805	9,206
34	83 " . . . . .	72	21,475	20,155	115,146	5.36	1,628	1,451	7,401
35	84 " . . . . .	67	18,835	17,583	94,991	5.04	1,314	1,178	5,949

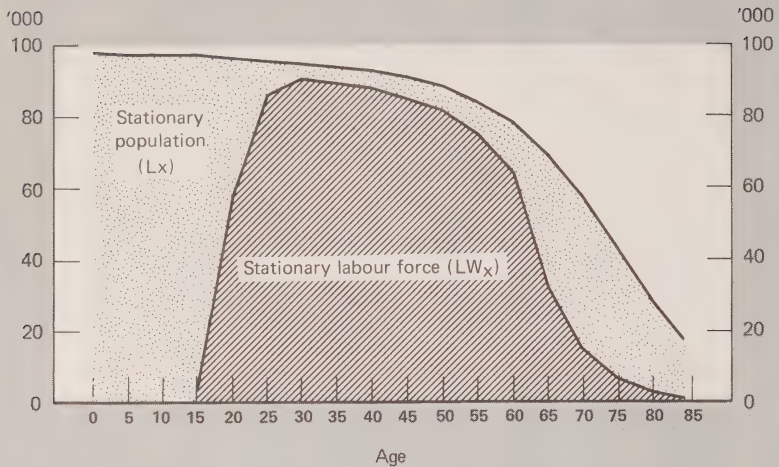
TABLE 3.1. Current Working Life Table for Males in Canada, 1971 — Concluded

Expected years of working life at exact age $x$	Expected years of retirement life at exact age $x$	Accession to labour force		Separation from the labour force						No.
				Total		Due to death		Due to causes other than death		
		Number	Rate per 1,000 population	Number	Rate per 1,000 in labour force	Number	Rate per 1,000 in labour force	Number	Rate per 1,000 in labour force	
$1,000 A_x$	$1,000 Q^s_x$									
$e^{\circ}wx$	$e^{\circ}rx$									
10	11	12	13	14	15	16	17	18	19	
15.30	9.22	—	0.0	1,180	14.48	651	7.99	529	6.49	1
14.50	9.21	—	0.0	1,318	16.41	707	8.80	611	7.62	2
13.72	9.19	—	0.0	1,284	16.26	765	9.68	519	6.58	3
12.94	9.17	—	0.0	1,167	15.02	825	10.61	342	4.41	4
12.14	9.20	—	0.0	1,395	18.23	887	11.59	508	6.64	5
11.33	9.24	—	0.0	1,536	20.44	950	12.64	586	7.80	6
10.55	9.27	—	0.0	2,007	27.27	1,016	13.80	991	13.46	7
9.79	9.29	—	0.0	2,303	32.16	1,082	15.11	1,221	17.05	8
9.07	9.28	—	0.0	2,510	36.22	1,148	16.57	1,362	19.65	9
8.38	9.26	—	0.0	2,784	41.68	1,210	18.12	1,574	23.56	10
7.69	9.26	—	0.0	3,195	49.91	1,265	19.77	1,930	30.14	11
7.04	9.23	—	0.0	3,576	58.81	1,310	21.54	2,266	37.27	12
6.41	9.20	—	0.0	3,269	57.11	1,350	23.58	1,919	33.53	13
5.77	9.19	—	0.0	5,032	93.24	1,362	25.23	3,670	68.01	14
5.19	9.14	—	0.0	16,503	337.23	1,173	23.96	15,330	313.27	15
5.36	8.36	—	0.0	4,344	133.95	948	29.24	3,396	104.72	16
6.14	6.98	—	0.0	3,786	134.77	893	31.80	2,893	102.98	17
6.02	6.52	—	0.0	3,376	138.91	838	34.50	2,538	104.41	18
5.90	6.08	—	0.0	2,979	142.34	782	37.35	2,197	104.99	19
5.78	5.65	—	0.0	2,770	154.35	722	40.22	2,048	114.12	20
5.70	5.20	—	0.0	2,175	143.31	665	43.83	1,510	99.48	21
5.63	4.75	—	0.0	1,947	149.73	616	47.38	1,331	102.35	22
5.51	4.37	—	0.0	1,678	151.73	567	51.31	1,111	100.42	23
5.41	3.98	—	0.0	1,426	152.06	521	55.57	905	96.49	24
5.29	3.63	—	0.0	1,368	171.98	473	59.48	895	112.50	25
5.21	3.26	—	0.0	1,013	153.91	428	65.05	585	88.86	26
5.15	2.87	—	0.0	934	167.60	390	70.02	544	97.57	27
5.04	2.56	—	0.0	783	168.74	352	75.98	431	92.76	28
4.97	2.22	—	0.0	647	167.79	318	82.52	329	85.26	29
4.88	1.91	—	0.0	556	173.20	286	89.28	270	83.92	30
4.79	1.62	—	0.0	473	178.12	256	96.66	217	81.46	31
4.71	1.34	—	0.0	375	171.94	230	105.43	145	66.52	32
4.62	1.08	—	0.0	354	196.14	204	113.08	150	83.05	33
4.55	0.81	—	0.0	273	188.19	179	123.48	94	64.71	34
4.53	0.51	—	0.0	238	202.04	162	137.52	76	64.52	35



Chart 3.1

**Working Life Table of Males, Canada, 1971**  
**Stationary Population and Labour Force**  
**Survivors of 100,000 Born Alive**



Source: Table 3.1

### Length of Working Life

Column 10 in Table 3.1 shows the average number of years of life remaining for workers at different ages in the labour force based upon the 1971 mortality pattern and labour force behaviour of males. Thus, a man aged 15 in 1971 could expect to be in the labour force for 47.3 years. Here two points are important to remember. First, it must be stressed that 47.3 years is an average period of time and secondly, this period applies only to men of a given age **in the labour force** rather than to all men in that age group. It is possible and sometimes desirable to calculate the average length of working life anticipated for all males of a given age rather than only for those in the labour force (or workers). This length ( $\bar{e}'_{w'_x}$ ) is always smaller than the aforecited working life expectancy ( $\bar{e}_{w_x}$ ) computed for workers only.<sup>2</sup> To this end, the calculation of working life for all men irrespective of whether or not they are in the work force indicates 45.0 years at age 15 (Column 9 ÷ Column 3, in Table 3.1). These two measures have certain merits for analytical purposes. The concept followed in the working life table (Table 3.1) is more conventional in that it is directly concerned with the expectation of the worker. The alternative measure ( $\bar{e}'_{w'_x}$ ) is, however, valuable in assessing the over-all changes in total life expectancy vis-à-vis the working life expectancy or the

<sup>2</sup> For technical details, see Appendix A.



non-working life expectancy. Thus, it may sometimes be useful to compare the average life expectancy at birth ( $e_o^o$ ) with the length of working life anticipated at birth ( $e_{w_o}'$ ). The difference between these two averages denotes what may be termed the "dependent life" expectancy at birth. This difference expressed as a ratio of the working life expectancy ( $e_{w_x}'$ ) may prove to be as meaningful an indicator as the conventional dependency ratio.<sup>3</sup>

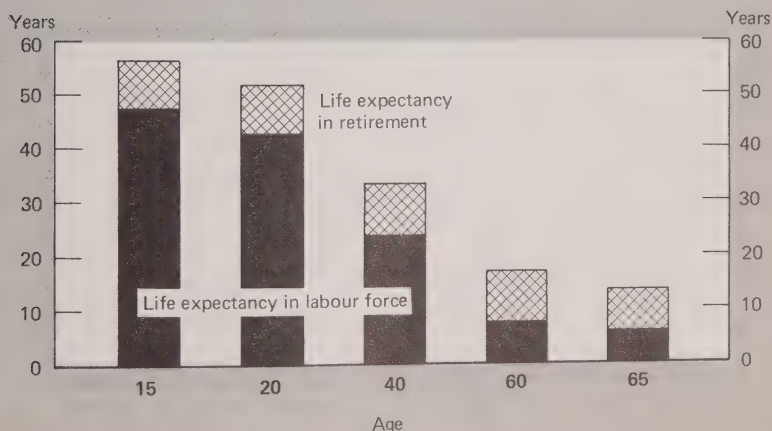
Through the comparison of life and working life expectancy at different ages (i.e.  $e_x^o$  and  $e_{w_x}'$ ), a number of inferences can be drawn regarding the duration of working life and retirement life (see Chart 3.2). Under the 1971 mortality conditions, a male aged 15 years could expect to live another 56.3 years (as shown by Column 6 of Table 3.1). Considering that he could expect to be in the labour force for about 47.3 years, the remaining period of 9.0 years shown in Column 11 (i.e. Column 6 minus Column 10) may be considered as the average retirement life. This difference, shown in Column 11, is fairly stable until the "sixties" and thereafter declines sharply as the probability of death increases. At

<sup>3</sup> The ratio of "inactive" to "active" population is known as the dependency ratio. It is also often calculated as the ratio of population below 14 and over 65 to population 15 to 64 years.

Chart 3.2

### Working Life Table, Males, Canada, 1971

#### Average Remaining Years of Life in Labour Force and in Retirement for Specific Ages



Source: Table 3.1

age 65, for example, the male worker would have a total life expectancy of 13.7 years<sup>4</sup> of which, he could expect to spend an average of 5.4 years in labour force and the remaining years in retirement (i.e. 8.4 years).

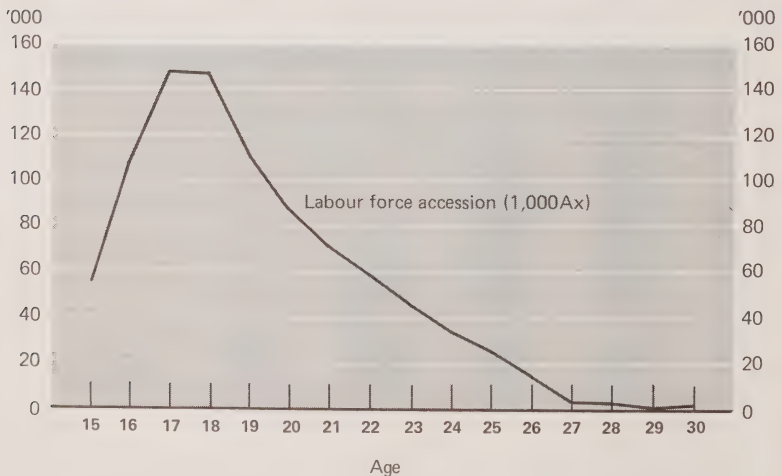
### Labour Force Accessions

The number of males joining the labour force each year or, in relative terms, the labour force accession (or entry) rate is a key factor in labour market dynamics. This factor corresponds to the number of births in a population; and the labour force is directly affected by the magnitude of labour force accessions taking place each year. This information is not directly available. Column 12 of Table 3.1 shows the absolute numbers of males entering into labour force for the first time at various ages from the stationary population, and Column 13 expresses these numbers as specific rates per 1,000 males in the stationary population. These accession figures were calculated from the net increases in  $Lw_x$  between successive ages. This column is based on the assumption of movement in one direction only, that is, the gross and net movements in the labour force are the

<sup>4</sup> Throughout this study, it has been assumed that the life expectancy of workers at any given age is the same as that of all persons alive at that age. This assumption is by and large valid for the prime ages of working life, i.e. 30 to 55 where most men are in the labour force, but for later ages, this assumption may be less and less valid.

Chart 3.3

### Working Life Tables of Males, Canada, 1971 Annual Rate of Labour Force Accession



Source: Table 3.1

same, and consequently, to the extent that there is some movement out, these rates will tend to underestimate the gross entry into the labour force. About one half of the males, according to the 1971 working life table presented in Table 3.1 (Column 12), enter the labour force in their late teens, particularly at 17 and 18 years of age. The annual rate of entry at these two ages reaches a peak of about 147 per thousand population. Beginning at age 19, as illustrated by Chart 3.3, the rate of accession into the labour force drops steadily to less than 5 per thousand between the ages 27 and 30.

By multiplying the population at each year of age in 1971 by the corresponding accession rates given in Column 13 of Table 3.1, it is possible to obtain estimates of the annual additions to the labour force by age. These estimates are given in Table 3.2. They indicate that there were roughly 184,000 new entrants into the labour force in 1971. Of this total, 120,000 or 65% belonged to ages 15 - 19, and 56,000 or 30% to ages 20 - 24. Based on the accession figures given in Table 3.2, the average age of entrance into the labour force was 19.4 years in 1971.

### Labour Force Separations

In addition to the provision of accession rates, the working life table contains valuable information on the probability of remaining in the labour force

**TABLE 3.2. Estimated Number of New Entrants to the Labour Force by Age, Males, 1971**

Age in 1971	Male population in 1971	Number of new entrants	Percentage distribution
15 years . . . . .	228,552	12,548	6.8
16 " . . . . .	226,164	24,392	13.2
17 " . . . . .	216,080	31,932	17.3
18 " . . . . .	206,565	30,318	16.4
19 " . . . . .	197,640	21,507	11.7
20 " . . . . .	190,118	16,512	9.0
21 " . . . . .	185,626	13,341	7.2
22 " . . . . .	184,881	10,889	5.9
23 " . . . . .	189,167	8,687	4.7
24 " . . . . .	193,241	6,561	3.6
25 " . . . . .	164,910	4,119	2.2
26 " . . . . .	159,941	2,238	1.2
27 " . . . . .	169,412	508	0.3
28 " . . . . .	155,188	466	0.2
29 " . . . . .	153,098	306	0.2
30 " . . . . .	138,278	138	0.1
<b>Total . . . . .</b>		<b>184,462</b>	<b>100.0</b>

**Source:** Based on male population (excluding institutional population) from the 1971 Census and accession rates given in Column 13, Table 3.1.

(sometimes called the labour force retention rate) or of leaving it owing to death or retirement. Thus, in Column 7 of Table 4.1, it may be noted that of the initial 100,000 population, 90,292 would be in the labour force at the exact age of 30 years. Of these, 75,846 could be expected to continue to be in the labour force at the exact age of 55. This means 84% of men of the exact age of 30 years who are in the labour force could expect to remain in it to age 55. Probabilities calculated in a similar way for various ages are shown in Table 3.3. These suggest an interesting picture, namely, that the probabilities of remaining in the work force are quite high and stable until age 60 when the values decline rapidly with the onset of high rates of withdrawal from the labour force.

**TABLE 3.3. Probabilities of Remaining in the Labour Force  
for Workers at Selected Ages, based on the Current Working Life Table  
for Males, Canada, 1971**

Age in 1971	Probabilities (for exact ages)					
	40	50	55	60	65	70
15 years . . . . .	.9513	.8870	.8203	.7073	.4400	.1791
30 " . . . . .	.9742	.9083	.8400	.7243	.4506	.1834
40 " . . . . .	...	.9324	.8623	.7435	.4625	.1883
50 " . . . . .	...	...	.9248	.7974	.4961	.2019
55 " . . . . .	...	...	...	.8623	.5364	.2184

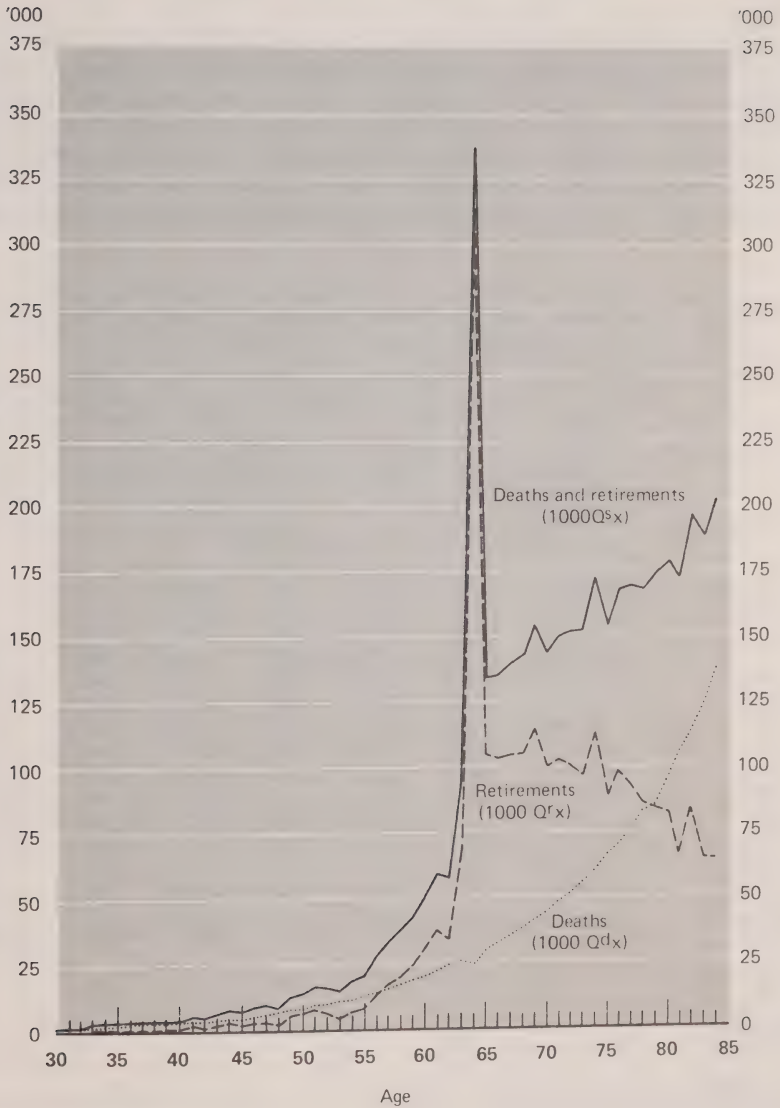
Source: Based on Table 3.1, Column 7.

The pattern of withdrawal or separation by age is shown in Chart 3.4 on the basis of information obtained from the working life tables (Columns 14 to 19 of Table 3.1). Withdrawal or separation from the labour force may result from death or retirement. Separation due to retirement here includes also withdrawal from the labour force due to disability, illness, or other factors. As in the case of accession figures, the labour force separations are derived by calculating the successive differences from one age to the next in the stationary labour force. The numbers of labour force separations thus derived are expressed as rates per 1,000 men of the respective ages in the stationary labour force ( $Lw_x$ ).<sup>5</sup> Separation rates by age illustrated in Chart 3.4 are fairly stable and low (less than 10 per 1,000 males in the labour force) until approximately age 50; thereafter, the rates increase rapidly to 20 per thousand workers among males aged 55, and 50 per

<sup>5</sup> It is worth noting that the labour force accession figures are expressed as rates per 1,000 men of the respective age in the stationary population ( $L_x$ ).

Chart 3.4

**Working Life Table, Males, Canada, 1971**  
**Annual Rate of Labour Force Separations**  
**due to Death and Retirement**



Source: Table 3.1



thousand among males of 60 years of age. A most interesting aspect of the retirement pattern shown by Chart 3.4 is the sudden peak at the age of 64 approximating a rate of 337 per thousand in the labour force or, in other words, one out of three at this age group will leave from the work force. After this age, the peak subsides but the separations continue in large numbers at the average rate of 141 per thousand in the ages 65 - 69 and 60 per thousand in the ages 70 - 79.

Total separations from the labour force may be explained in terms of the two components: (a) separations due to death, and (b) separations due to retirement. Columns 16 to 19 of Table 3.1 show, in absolute and relative terms, the corresponding impacts of deaths and retirements on the labour force. Mortality is undoubtedly the main factor responsible for labour force separations in the young and prime working ages. After age 55, the rate of retirement which remained quite low between the thirties and mid-fifties, rises faster and accounts

**TABLE 3.4. Estimated Number of Separations due to Death and Retirement from the Labour Force, by Age, Males, 1971**

Age in 1971	Male labour force in 1971	Total separations		Due to deaths		Due to retirements and other causes	
		Number	Per cent distribution	Number	Per cent distribution	Number	Per cent distribution
15-19 years . . .	244,215	361	0.37	361	0.98	0	0
20-24 " . . .	709,350	1,277	1.31	1,277	3.46	0	0
25-29 " . . .	749,462	1,139	1.17	1,139	3.09	0	0
30-34 " . . .	629,766	1,316	1.35	1,052	2.85	264	0.44
35-39 " . . .	611,874	2,062	2.11	1,420	3.85	642	1.06
40-44 " . . .	604,783	3,405	3.49	2,256	6.11	1,149	1.89
45-49 " . . .	571,306	5,250	5.38	3,416	9.25	1,834	3.02
50-54 " . . .	472,963	7,605	7.80	4,602	12.47	3,003	4.95
55-59 " . . .	411,209	12,973	13.30	6,271	16.99	6,702	11.05
60-64 " . . . .	292,396	34,871	35.73	6,672	18.07	28,199	46.51
65-69 " . . .	114,318	16,103	16.51	3,958	10.72	12,145	20.03
70-74 " . . .	45,033	6,924	7.10	2,320	6.28	4,604	7.59
75-79 " . . .	17,788	2,957	3.03	1,362	3.69	1,595	2.63
80-84 " . . .	7,011	1,313	1.35	808	2.19	505	0.83
<b>Total . . . . .</b>		<b>97,556</b>	<b>100.00</b>	<b>36,914</b>	<b>100.00</b>	<b>60,642</b>	<b>100.00</b>
Median age . . . .		61.90		57.35		62.95	
Mean age . . . . .		59.28		54.73		62.05	

**Source:** Based on male labour force for the 1971 Census and separation rates given in Columns 12 to 19, Table 3.1.



for the bulk of labour force separations. Between the ages 55 and 59, retirement is estimated to occur at the rate of 17 per thousand workers. The retirement curve in Chart 3.4 continues to rise and attains the peak rate of 313 per thousand at the age 64. Though the rate drops from this peak level after age 65, retirement continues to account for the largest proportion of labour force separations.

Table 3.4 presents the application of these rates to the actual labour force recorded in the 1971 Census to indicate roughly the magnitude of separations due to death and retirement. On the basis of the 1971 working life pattern or, to be more precise, mortality and retirement patterns, about 98,000 men would have left the labour force in that year. Of these men, 61,000 or 62% would have left the labour force mostly on their own will in view of their old age. The estimated median age at the time of retirement was 63.0 years for males in 1971.



## CHAPTER 4

### COHORT WORKING LIFE TABLES

As already indicated, current life and working life tables are based on rates for each age observed at one point in time and assume that these rates will remain unchanged and thus present a static picture. In reality, however, mortality and labour force participation rates are constantly changing in Canada as in other countries. One way of taking into account the changing pattern of mortality so as to depict a dynamic picture is through calculating the generation or cohort life table in which each birth cohort is followed through time until its last member dies. Similarly, a cohort working life table may be compiled based on the experience of a birth cohort from its entry into the work force until the last worker in the group has died or retired from the labour force. The major difficulties in developing such tables lie chiefly in the unavailability of long time series of mortality and labour force data, and, in regard to the latter, the lack of uniform concepts underlying the available data.

Despite these difficulties, this section attempts to develop cohort working life tables for males in an effort to provide some understanding of the lifetime experiences of mortality and work participation by a group of people born in the same period, and secondly, to contrast this real pattern with the static picture presented by the current working life table. To do this, this study made use of the cohort life table for males. As explained at length in Appendix B these tables were developed for this study on the basis of available mortality statistics and projections for Canada. Chart 4.1 illustrates the survival curve (i.e.  $L_{xt}$  column of the cohort life table) for selected cohorts born since 1931. It may be noted that the broken lines are based on projected mortality rates. The cohort life tables for males which are shown in Table 18 in Part II suggests that the male cohort born in 1971 may have an average life expectancy of 71.1 years as compared to 69.8 shown by the 1971 current life table. Similarly, the estimates for cohorts born in 1966, 1961, 1956 and forth show higher values of life expectancy than the current life tables for the corresponding years.

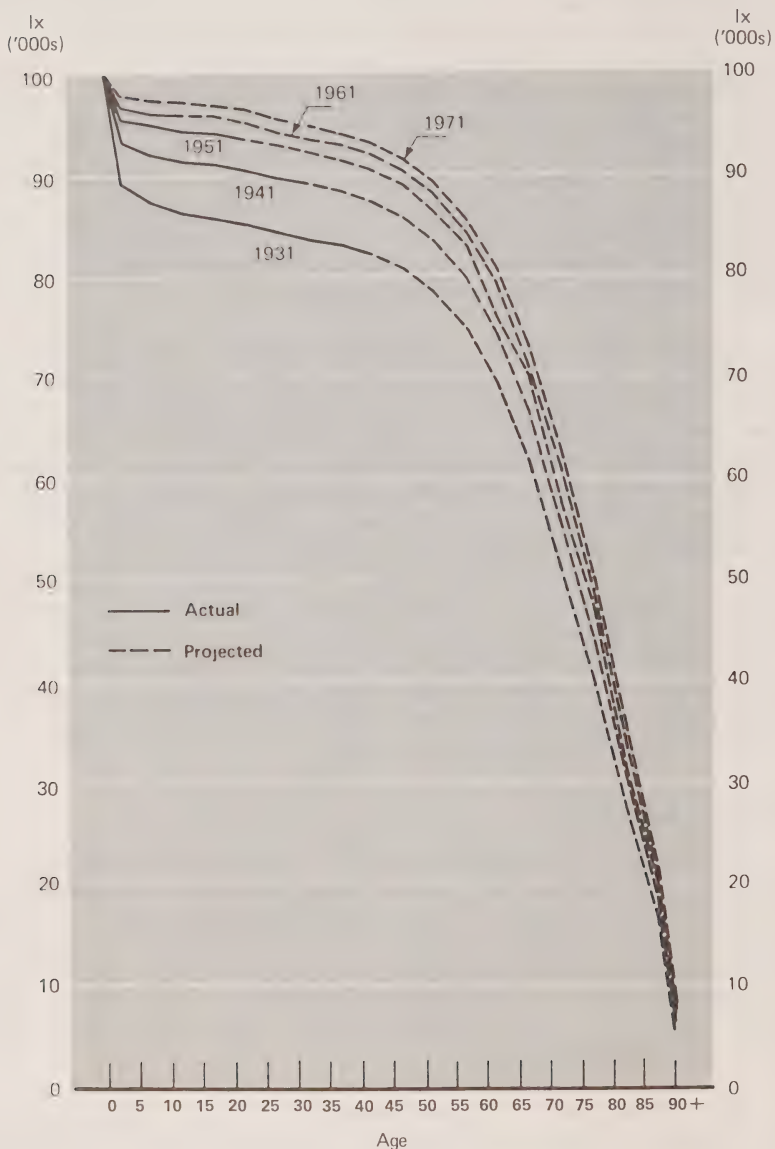
#### Method of Estimation

Along with the generation or cohort life table, the key to the construction of a cohort working life table is the schedule of labour force participation rates of a cohort born in a given period. A birth cohort born in year  $t$  which will commonly not enter the labour force before age 15, according to the 1971 Census definition, however, may be regarded as a labour force cohort in  $t + 15$  years. For example, the birth cohort of 1956 may be treated as the cohort that starts to enter the labour force in 1971 or, more simply, the 1971 labour force cohort as it will be termed in the following pages.

Before proceeding to the development of a series of cohort participation rates, Table 4.1 was initially calculated to present what may be called a

Chart 4.1

**Number of Survivors of 100,000 Born Alive ( $l_x$  t) Males,  
Canada, by Years of Birth, 1931-1961**



Source: Table 18

quasi-cohort working life table for males born in 1956, that is, the 1971 labour force cohort. This table is based on the generation or cohort life table for males born in 1956 (see Appendix B). With respect to the labour force inputs, it has been assumed that the 1971 labour force cohort will exhibit the same pattern of labour force participation as observed in 1971.

In order to estimate the cohort working life table proper for the 1971 labour force cohort (i.e. the 1956 birth cohort), it is essential to know the labour force participation rates of this cohort at successive ages. As in the case of mortality, this series could be approximated by using the forecasts of male labour force participation rates prepared in Chapter 2. Conversion of period rates into cohort rates would pose many definitional and methodological problems; however, estimates of worker rates on a cohort basis were developed by Frank Denton and Sylvia Ostry for those portions of the lifetimes of various cohorts that coincide with the period for which the necessary data were available.<sup>1</sup> Starting from their cohort series, a participation profile has been advanced for another span of ten years using the 1971 data (see Table 15 in Part II) which, in turn, has been completed with the aid of projected rates of labour force participation developed in this study. The completed series, based on actual and projected rates, has been slightly smoothed before being used to construct the cohort working life table<sup>2</sup> shown in Table 4.2.

### Cohort Versus Current Working Life Expectancy

On the basis of Tables 4.1 and 4.2 the generation of males born in 1956 could expect to work between 46.5 years and 47.5 years on the average. The total life expectancy for this generation at age 15 should be approximately 57.4 years, which would leave a balance of 10.9 and 9.9 years to be spent in retirement or outside the labour force.

Table 4.3 compares the average number of years of life remaining in the labour force based upon both cohort and current tables. Two different pictures emerge from this comparison depending upon whether one adopts Hypothesis A representing the quasi-cohort life table or Hypothesis B denoting the cohort life table. It is likely that the ultimate picture will tend to lie more in the direction of Hypothesis B. Turning to the quasi-cohort working life table (Hypothesis A), it can be seen that the 1971 labour force cohort will have a higher working life expectancy than that indicated by the current working life table. Thus, according to Table 3.1, a man entering the labour force at age 15 could expect to work for 47.3 years. In contrast, according to the cohort working life table shown in Table 4.1, he would expect to work 47.5 years or 0.2 year more. The cohort values are also higher for other ages shown in Table 4.3. It is suggested that this trend is primarily due to the effect of mortality which is assumed to decline in the future rather than remain constant at the 1971 level and pattern.

<sup>1</sup> Frank T. Denton and Sylvia Ostry, *op. cit.*, pp. 55 - 56.

<sup>2</sup> For a series of generation working life tables, see Howard N. Fullerton, Jr., "A New Type of Working Life Table for Men", *Monthly Labour Review*, July 1972, pp. 20 - 27.

TABLE 4.1. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956)

Hypothesis A

No.	Age	Labour force per 1,000 population	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)	
			In the population	In the labour force
	$xt$	$1,000 wxt$	$Lxt$	$Lw*xt$
1	15 years . . . . .	39	95,379	3,720
2	16 " . . . . .	94	95,290	8,957
3	17 " . . . . .	202	95,178	19,226
4	18 " . . . . .	350	95,036	33,263
5	19 " . . . . .	497	94,873	47,152
6	20 " . . . . .	606	94,707	57,392
7	21 " . . . . .	693	94,535	65,513
8	22 " . . . . .	765	94,363	72,188
9	23 " . . . . .	824	94,194	77,616
10	24 " . . . . .	870	94,027	81,803
11	25 " . . . . .	904	93,855	84,845
12	26 " . . . . .	929	93,678	87,027
13	27 " . . . . .	943	93,513	88,183
14	28 " . . . . .	946	93,367	88,325
15	29 " . . . . .	949	93,232	88,477
16	30 " . . . . .	950	93,091	88,436
17	31 " . . . . .	952	92,946	88,485
18	32 " . . . . .	952	92,797	88,343
19	33 " . . . . .	952	92,645	88,198
20	34 " . . . . .	951	92,486	87,954
21	35 " . . . . .	950	92,317	87,701
22	36 " . . . . .	949	92,135	87,436
23	37 " . . . . .	948	91,941	87,160
24	38 " . . . . .	947	91,731	86,869
25	39 " . . . . .	946	91,504	86,563
26	40 " . . . . .	945	91,256	86,237
27	41 " . . . . .	944	90,982	85,887
28	42 " . . . . .	942	90,686	85,426
29	43 " . . . . .	941	90,366	85,034
30	44 " . . . . .	939	90,017	84,526
31	45 " . . . . .	936	89,632	83,896
32	46 " . . . . .	934	89,210	83,322
33	47 " . . . . .	931	88,747	82,623
34	48 " . . . . .	928	88,243	81,890
35	49 " . . . . .	926	87,692	81,203
36	50 " . . . . .	921	87,090	80,210

Source: Based on Tables 15 and 18. See text for methodology.



TABLE 4.1. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956)

Hypothesis A

Average number of years remaining to persons in the labour force at exact age x			Accession to labour force	Separation from the labour force			No.
				Total	Death	Other causes	
Years of life	Years of labour force activity	Years of retire- ment	Rate per 1,000 population	Rate per 1,000 population	Rate per 1,000 population	Rate per 1,000 population	
$e^{\circ}xt$	$e^{\circ}wxt$	$e^{\circ}rxt$	$1,000 Axt$	$1,000 Q^sxt$	$1,000 Q^dxt$	$1,000 Q^rxt$	
57.39	47.54	9.85	54.90	0.93	0.93	0.00	1
56.49	46.59	9.90	107.88	1.18	1.18	0.00	2
55.49	45.64	9.85	147.78	1.49	1.49	0.00	3
54.62	44.70	9.92	146.75	1.72	1.72	0.00	4
53.66	43.77	9.89	108.81	1.75	1.75	0.00	5
52.77	42.84	9.93	86.86	1.82	1.82	0.00	6
51.87	41.92	9.95	71.88	1.82	1.82	0.00	7
50.96	40.99	9.97	58.90	1.79	1.79	0.00	8
50.06	40.07	9.99	45.92	1.77	1.77	0.00	9
49.14	39.14	10.00	33.95	1.83	1.83	0.00	10
48.26	38.21	10.05	24.96	1.89	1.89	0.00	11
47.28	37.28	10.00	13.99	1.76	1.76	0.00	12
46.44	36.34	10.10	3.00	1.56	1.56	0.00	13
45.45	35.40	10.05	3.00	1.45	1.45	0.00	14
44.58	34.46	10.12	2.00	1.51	1.51	0.00	15
43.62	33.51	10.11	1.00	1.56	1.56	0.00	16
42.67	32.56	10.11	—	1.60	1.60	0.00	17
41.75	31.61	10.14	—	1.64	1.64	0.00	18
40.80	30.66	10.14	—	2.77	1.72	1.05	19
39.89	29.72	10.17	—	2.88	1.83	1.05	20
38.95	28.81	10.14	—	3.02	1.97	1.05	21
38.02	27.89	10.13	—	3.16	2.10	1.05	22
37.10	26.98	10.12	—	3.34	2.28	1.05	23
36.18	26.06	10.12	—	3.53	2.47	1.05	24
35.26	25.15	10.11	—	3.76	2.71	1.06	25
34.35	24.24	10.11	—	4.06	3.00	1.06	26
33.45	23.33	10.12	—	5.37	3.25	2.12	27
32.55	22.44	10.11	—	4.59	3.53	1.06	28
31.64	21.55	10.09	—	5.98	3.86	2.12	29
30.80	20.66	10.14	—	7.46	4.27	3.19	30
29.90	19.80	10.10	—	6.83	4.70	2.13	31
29.04	18.94	10.10	—	8.39	5.18	3.20	32
28.17	18.08	10.09	—	8.88	5.67	3.21	33
27.33	17.23	10.10	—	8.39	6.24	2.15	34
26.48	16.38	10.10	—	12.23	6.85	5.38	35
25.65	15.54	10.11	—	14.00	7.51	6.49	36

TABLE 4.1. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956) — Concluded

Hypothesis A

No.	Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)	
			In the population	In the labour force
	$xt$	$1,000\ wxt$	$Lxt$	$Lw*xt$
1	51 years . . . . .	915	86,434	79,807
2	52 " . . . . .	908	85,723	77,836
3	53 " . . . . .	902	84,957	76,631
4	54 " . . . . .	898	84,131	75,550
5	55 " . . . . .	892	83,234	74,245
6	56 " . . . . .	885	82,262	72,802
7	57 " . . . . .	873	81,218	70,903
8	58 " . . . . .	858	80,097	68,723
9	59 " . . . . .	841	78,894	66,350
10	60 " . . . . .	821	77,607	63,715
11	61 " . . . . .	796	76,236	60,684
12	62 " . . . . .	766	74,746	57,255
13	63 " . . . . .	740	73,121	54,110
14	64 " . . . . .	689	71,374	49,177
15	65 " . . . . .	470	69,541	32,684
16	66 " . . . . .	420	67,620	28,400
17	67 " . . . . .	376	65,590	24,662
18	68 " . . . . .	336	63,447	21,318
19	69 " . . . . .	300	61,201	18,360
20	70 " . . . . .	265	58,878	15,603
21	71 " . . . . .	238	56,487	13,444
22	72 " . . . . .	213	53,996	11,501
23	73 " . . . . .	191	51,396	9,817
24	74 " . . . . .	172	48,713	8,379
25	75 " . . . . .	152	45,987	6,990
26	76 " . . . . .	138	43,221	5,964
27	77 " . . . . .	124	40,426	5,013
28	78 " . . . . .	112	37,613	4,213
29	79 " . . . . .	102	34,791	3,549
30	80 " . . . . .	93	32,016	2,977
31	81 " . . . . .	85	29,347	2,494
32	82 " . . . . .	79	26,546	2,097
33	83 " . . . . .	74	23,521	1,741
34	84 " . . . . .	70	20,433	1,430

**TABLE 4.1. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956) – Concluded**

Hypothesis A

Average number of years remaining to persons in the labour force at exact age $x$			Accession to labour force	Separation from the labour force			No.
				Total	Death	Other causes	
Years of life	Years of labour force activity	Years of retirement	Rate per 1,000 population	Rate per 1,000 population	Rate per 1,000 population	Rate per 1,000 population	
$e^{\circ}xt$	$e^{\circ}wxt$	$e^{\circ}rxt$	$1,000 Axt$	$1,000 Q^sxt$	$1,000 Q^dxt$	$1,000 Q^rxt$	
24.85	14.74	10.11	—	15.81	8.19	7.62	1
24.02	13.96	10.06	—	15.48	8.91	6.58	2
23.24	13.17	10.07	—	14.11	9.70	4.41	3
22.44	12.36	10.08	—	17.27	10.63	6.65	4
21.67	11.55	10.12	—	19.43	11.63	7.80	5
20.92	10.75	10.17	—	26.08	12.61	13.47	6
20.16	9.99	10.17	—	30.75	13.68	17.06	7
19.43	9.27	10.16	—	34.54	14.87	19.66	8
18.70	8.56	10.14	—	39.71	16.12	23.59	9
17.98	7.87	10.11	—	47.58	17.40	30.18	10
17.31	7.21	10.10	—	56.50	19.18	37.32	11
16.60	6.57	10.03	—	54.94	21.38	33.57	12
15.96	5.93	10.03	—	91.16	23.08	68.09	13
15.30	5.35	9.95	—	335.37	21.65	313.72	14
14.67	5.55	9.12	—	131.07	26.18	104.89	15
14.10	6.36	7.74	—	131.64	28.47	103.17	16
13.46	6.25	7.21	—	135.58	30.96	104.62	17
12.92	6.14	6.78	—	138.75	33.54	105.21	18
12.31	6.04	6.27	—	150.19	35.79	114.41	19
11.80	5.98	5.82	—	138.36	38.58	99.78	20
11.25	5.92	5.33	—	144.51	41.83	102.67	21
10.73	5.81	4.92	—	146.46	45.73	100.74	22
10.21	5.72	4.49	—	146.49	49.68	96.81	23
9.74	5.63	4.11	—	165.73	52.80	112.93	24
9.23	5.57	3.66	—	146.71	57.46	89.25	25
8.83	5.53	3.30	—	159.56	61.50	98.06	26
8.32	5.44	2.88	—	159.62	66.34	93.29	27
7.95	5.39	2.56	—	157.61	71.81	85.81	28
7.46	5.32	2.14	—	160.96	76.39	84.57	29
7.10	5.24	1.86	—	162.21	79.93	82.28	30
6.66	5.16	1.50	—	159.30	92.24	67.05	31
6.26	5.06	1.20	—	169.77	113.97	55.80	32
5.92	4.96	0.96	—	178.63	131.53	47.10	33
5.71	4.94	0.77	—	163.64	86.01	77.63	34

TABLE 4.2. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956)

Hypothesis B

	Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old on last birthday (assuming 100,000 live births per year)	
			In the population	In the labour force
No.	$xt$	$1,000\ wxt$	$Lxt$	$Lw*xt$
1	15 years . . . . .	39	95,379	3,720
2	16 " . . . . .	94	95,290	8,957
3	17 " . . . . .	202	95,178	19,226
4	18 " . . . . .	350	95,036	33,263
5	19 " . . . . .	497	94,873	47,152
6	20 " . . . . .	606	94,707	57,392
7	21 " . . . . .	653	94,535	61,731
8	22 " . . . . .	697	94,363	65,771
9	23 " . . . . .	738	94,194	69,515
10	24 " . . . . .	775	94,027	72,871
11	25 " . . . . .	809	93,855	75,929
12	26 " . . . . .	841	93,678	78,783
13	27 " . . . . .	871	93,513	81,450
14	28 " . . . . .	897	93,367	83,750
15	29 " . . . . .	924	93,232	86,146
16	30 " . . . . .	950	93,091	88,436
17	31 " . . . . .	949	92,946	88,206
18	32 " . . . . .	948	92,797	87,972
19	33 " . . . . .	947	92,645	87,735
20	34 " . . . . .	946	92,486	87,492
21	35 " . . . . .	945	92,317	87,240
22	36 " . . . . .	944	92,135	86,975
23	37 " . . . . .	943	91,941	86,700
24	38 " . . . . .	942	91,731	86,411
25	39 " . . . . .	941	91,504	86,105
26	40 " . . . . .	940	91,256	85,781
27	41 " . . . . .	939	90,982	85,432
28	42 " . . . . .	938	90,686	85,063
29	43 " . . . . .	937	90,366	84,673
30	44 " . . . . .	935	90,017	84,166
31	45 " . . . . .	933	89,632	83,627
32	46 " . . . . .	931	89,210	83,054
33	47 " . . . . .	928	88,747	82,357
34	48 " . . . . .	926	88,243	81,713
35	49 " . . . . .	923	87,692	80,940

**TABLE 4.2. Cohort Working Life Table for Males Entering the Labour Force  
of Canada in 1971 (or born in 1956)**

Hypothesis B

Average number of years remaining to persons in the labour force at exact age x			Accession to labour force	Separation from the labour force			No.
Years of life	Years of labour force activity	Years of retire- ment		Total	Death	Other causes	
$e^{\circ}_{xt}$	$e^{\circ}_{wxt}$	$e^{\circ}_{rxt}$	Rate per 1,000 population	Rate per 1,000 in labour force	Rate per 1,000 in labour force	Rate per 1,000 in labour force	
$e^{\circ}_{xt}$	$e^{\circ}_{wxt}$	$e^{\circ}_{rxt}$	1,000 $A_{xt}$	1,000 $Q^s_{xt}$	1,000 $Q^d_{xt}$	1,000 $Q^r_{xt}$	
57.39	46.53	10.86	54.90	0.93	0.93	—	1
56.49	45.57	10.92	107.88	1.18	1.18	—	2
54.62	44.62	10.00	147.78	1.49	1.49	—	3
54.62	43.68	10.94	146.75	1.72	1.72	—	4
53.66	42.75	10.91	108.81	1.75	1.75	—	5
52.77	41.82	10.95	46.92	1.82	1.82	—	6
51.87	40.90	10.97	43.93	1.82	1.82	—	7
50.96	39.97	10.99	40.93	1.79	1.79	—	8
50.06	39.04	11.02	36.95	1.77	1.77	—	9
49.14	38.11	11.03	33.95	1.83	1.83	—	10
48.26	37.18	11.08	31.94	1.89	1.89	—	11
47.28	36.25	11.03	29.96	1.76	1.76	—	12
46.44	35.31	11.18	26.97	1.56	1.56	—	13
45.45	34.37	11.08	26.97	1.45	1.45	—	14
44.58	33.42	11.16	25.97	1.51	1.51	—	15
43.62	32.47	11.15	—	1.56	1.56	—	16
42.67	31.52	11.15	—	1.60	1.60	—	17
41.75	30.57	11.18	—	1.64	1.64	—	18
40.80	29.76	11.04	—	2.77	1.72	1.06	19
39.89	28.84	11.05	—	2.88	1.83	1.06	20
38.95	27.92	11.03	—	3.03	1.97	1.06	21
38.02	27.00	11.02	—	3.16	2.10	1.06	22
37.10	26.08	11.02	—	3.34	2.28	1.06	23
36.18	25.16	11.02	—	3.53	2.47	1.06	24
35.26	24.25	11.01	—	3.77	2.71	1.06	25
34.35	23.34	11.01	—	4.06	3.00	1.06	26
33.45	22.43	11.02	—	4.31	3.25	1.06	27
32.55	21.52	11.03	—	4.59	3.53	1.06	28
31.64	20.61	11.03	—	5.99	3.86	2.13	29
30.80	19.72	11.08	—	6.41	4.27	2.13	30
29.90	18.84	11.06	—	6.84	4.70	2.14	31
29.04	17.96	11.08	—	8.40	5.18	3.21	32
28.17	17.09	11.08	—	7.82	5.67	2.15	33
27.33	16.23	11.10	—	9.46	6.23	3.23	34
26.48	15.37	11.11	—	9.02	6.86	2.16	35

TABLE 4.2. Cohort Working Life Table for Males Entering the Labour Force of Canada in 1971 (or born in 1956) — Concluded

Hypothesis B

No.	Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old on last birthday (assuming 100,000 live births per year)	
			In the population	In the labour force
	$xt$	$1,000 \text{ } wxt$	$Lxt$	$Lw*xt$
1	50 years . . . . .	921	87,090	80,210
2	51 " . . . . .	911	86,434	78,741
3	52 " . . . . .	901	85,723	77,236
4	53 " . . . . .	891	84,957	75,697
5	54 " . . . . .	881	84,131	74,119
6	55 " . . . . .	871	83,234	72,497
7	56 " . . . . .	861	82,262	70,828
8	57 " . . . . .	851	81,218	69,117
9	58 " . . . . .	841	80,097	67,362
10	59 " . . . . .	831	78,894	65,561
11	60 " . . . . .	821	77,607	63,715
12	61 " . . . . .	765	76,236	58,321
13	62 " . . . . .	710	74,746	53,070
14	63 " . . . . .	654	73,121	47,821
15	64 " . . . . .	599	71,374	42,753
16	65 " . . . . .	337	69,541	23,435
17	66 " . . . . .	290	67,620	19,610
18	67 " . . . . .	253	65,590	16,594
19	68 " . . . . .	224	63,447	14,212
20	69 " . . . . .	200	61,201	12,240
21	70 " . . . . .	191	58,878	11,246
22	71 " . . . . .	177	56,487	9,998
23	72 " . . . . .	167	53,996	9,017
24	73 " . . . . .	156	51,396	8,018
25	74 " . . . . .	144	48,713	7,015
26	75 " . . . . .	129	45,987	5,932
27	76 " . . . . .	123	43,221	5,316
28	77 " . . . . .	115	40,426	4,649
29	78 " . . . . .	110	37,613	4,137
30	79 " . . . . .	100	34,791	3,479
31	80 " . . . . .	91	32,016	2,913
32	81 " . . . . .	83	29,347	2,436
33	82 " . . . . .	77	26,546	2,044
34	83 " . . . . .	71	23,521	1,670
35	84 " . . . . .	70	20,433	1,430



TABLE 4.2. Cohort Working Life Table for Males Entering the Labour Force of Canada in 1971 (or born in 1956) – Concluded

Hypothesis B

Average number of years remaining to persons in the labour force at exact age x			Accession to labour force	Separation from the labour force			No.
Years of life	Years of labour force activity	Years of retirement		Rate per 1,000 population	Total	Death	
			Rate per 1,000 in labour force		Rate per 1,000 in labour force	Rate per 1,000 in labour force	
$e^{\circ}_{xt}$	$e^{\circ}_{wxt}$	$e^{\circ}_{rxt}$	$1,000 A_{xt}$	$1,000 Q^s_{xt}$	$1,000 Q^d_{xt}$	$1,000 Q^r_{xt}$	
25.65	14.51	11.14	—	18.31	7.49	10.82	1
24.85	13.70	11.15	—	19.11	8.18	10.93	2
24.02	12.95	11.07	—	19.94	8.89	11.05	3
23.24	12.20	11.04	—	20.84	9.67	11.17	4
22.44	11.44	11.00	—	21.89	10.60	11.29	5
21.67	10.68	11.00	—	23.02	11.61	11.41	6
20.92	9.91	11.01	—	24.16	12.62	11.54	7
20.16	9.14	11.02	—	25.39	13.72	11.67	8
19.43	8.36	11.07	—	26.73	14.93	11.80	9
18.70	7.57	11.13	—	28.15	16.22	11.93	10
17.98	6.77	11.21	—	84.67	17.07	67.60	11
17.31	6.12	11.19	—	90.03	18.85	71.19	12
16.60	5.66	10.94	—	98.90	20.89	78.01	13
15.96	5.20	10.76	—	105.98	22.90	83.08	14
15.30	4.74	10.56	—	451.84	20.14	431.71	15
14.67	5.19	9.48	—	163.24	25.72	137.51	16
14.10	6.89	7.21	—	153.78	28.13	125.64	17
13.46	7.11	6.35	—	143.55	30.83	112.72	18
12.92	7.28	5.64	—	138.75	33.54	105.21	19
12.31	7.40	4.91	—	81.25	37.12	44.13	20
11.80	7.29	4.51	—	110.93	39.15	71.78	21
11.25	7.00	4.25	—	98.10	42.88	55.22	22
10.73	6.77	3.96	—	110.85	46.60	64.24	23
10.21	6.50	3.71	—	125.11	50.25	74.86	24
9.74	6.30	3.44	—	154.30	53.13	101.17	25
9.23	6.23	3.00	—	103.86	58.79	45.07	26
8.83	6.12	2.71	—	125.50	62.63	62.87	27
8.32	5.84	2.48	—	110.04	68.13	41.91	28
7.95	5.56	2.39	—	159.12	71.75	87.37	29
7.46	5.33	2.13	—	162.58	76.32	86.26	30
7.10	5.27	1.83	—	163.95	79.86	84.09	31
6.66	5.20	1.46	—	160.83	92.17	68.67	32
6.26	5.13	1.13	—	182.97	113.99	68.98	33
5.92	5.08	0.84	—	143.71	86.89	56.82	34
5.71	5.03	0.68	—	163.64	139.16	24.48	35

TABLE 4.3. Expectation of Years of Life, Working Life and Retirement for Cohorts of Men entering the Labour Force in 1956, 1966 and 1971

Age	Expectation of life				Expectation of working life				Expectation of retirement			
	1956	1966	1971		1956	1966	1971		1956	1966	1971	
			A	B			A	B			A	B
15 years . . . . .	57.0	57.2	57.4	57.4	46.7	46.7	47.5	46.5	10.3	10.5	9.9	10.9
20 “ . . . . .	52.3	52.5	52.8	52.8	42.0	42.0	42.8	41.8	10.3	10.5	9.9	11.0
40 “ . . . . .	33.9	34.1	34.4	34.4	23.4	23.4	24.2	23.3	10.5	10.7	10.1	11.0
60 “ . . . . .	17.6	17.9	18.0	18.0	6.8	6.8	7.9	6.8	10.8	11.3	10.1	11.2
65 “ . . . . .	14.3	14.5	14.7	14.7	5.2	5.3	5.6	5.2	9.1	9.2	9.1	9.5

The cohort working life table (Hypothesis B) shows that a worker aged 15 in 1971 could expect to work 46.5 years or 0.8 years less than the expectation based on the current working life table. At age 60, the cohort table indicates a working life expectancy that is 1.1 years shorter than the length of time indicated by the current table. Table 4.3 presents the average working life expectancy for the 1956 and 1966 labour force cohorts as well. Comparison of the current and cohort tables for 1966 again reveals that the cohort expectations of working life are almost a year less than the current values. The lower expectations are also observed in the cohort tables for all other ages (see Table 4.4).

TABLE 4.4. Expected Years of Working Life according to Cohort and Current Tables, Males, Canada, 1971

Age	Cohort tables				Current tables			
	1956	1966	1971		1961	1966 <sup>1</sup>	1971	1986 B
			A	B				
15 years . . . . .	46.74	46.73	47.54	46.53	48.00	47.6	47.30	46.84
20 " . . . . .	41.99	41.97	42.84	41.82	43.20	42.9	42.61	42.06
40 " . . . . .	23.43	23.44	24.24	23.34	24.50	24.2	23.98	23.70
60 " . . . . .	6.79	6.85	7.87	6.77	8.20	7.9	7.69	7.42
65 " . . . . .	5.21	5.27	5.55	5.19	5.70	5.5	5.36	5.28

<sup>1</sup> Figures are obtained by averaging the values for 1961 and 1971.

## CHAPTER 5

### PROVINCIAL DIFFERENCES IN WORKING LIFE

The preceding analysis relates to Canada as a whole. It is well understood, however, that economic and social conditions differ at the subnational level. The labour force participation rates and the mortality situation may be different in different parts of the country. This chapter is therefore devoted to an examination of the extent of regional or provincial variations in terms of the length and pattern of working life in 1971. This examination is based on a compilation of current working life tables rather than cohort working life tables for the provinces.

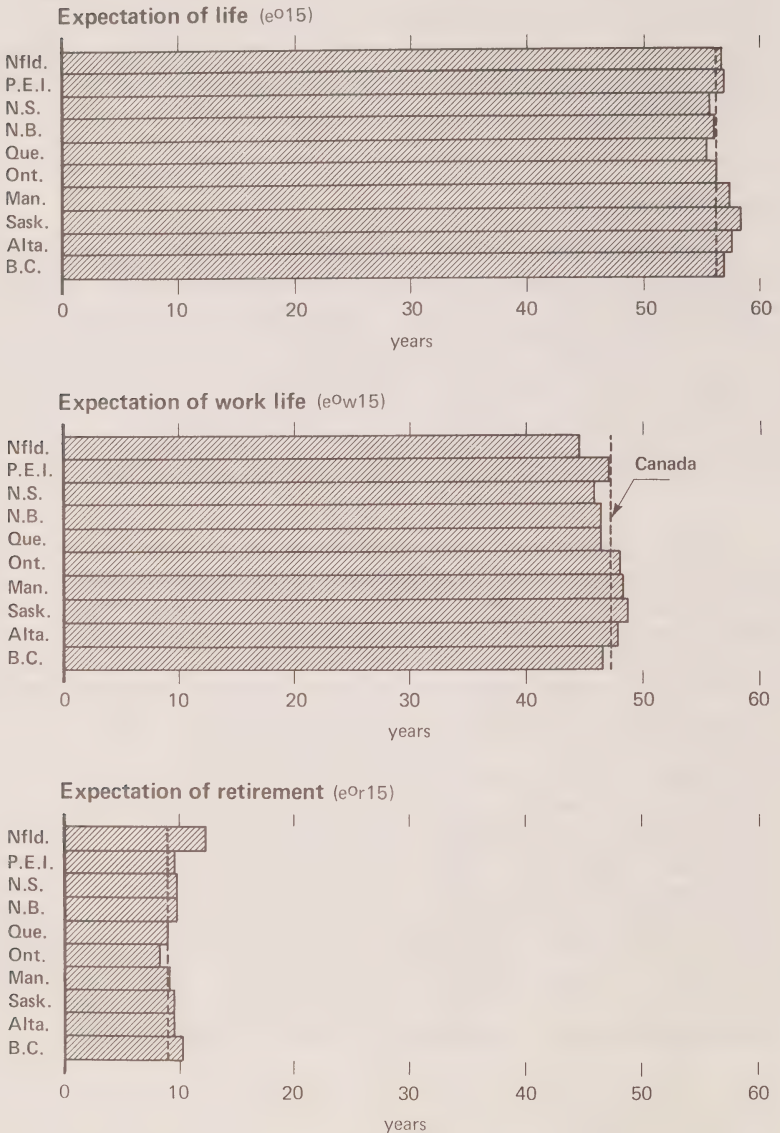
#### Length of Working Life

Table 5.1 presents the length of working life in each of the ten provinces and compares these values with that for Canada as a whole. Prior to an analysis of provincial differentials in working life expectancy, it may be helpful to review briefly the mortality situations in each province since this pre-determines the stationary population on which the calculation of working life table is based. According to the life tables, the mortality differences among provinces were not great. In 1971, the expectation of life at age 15 varied from 55.4 years (in Quebec) to 58.4 years (in Saskatchewan). The average absolute deviation from Canada figure, as shown in Table 5.1, was 0.8 years (see also Chart 5.1).

The working life expectancy varied among the provinces from 44.6 years (in Newfoundland) to 48.8 years (in Saskatchewan). The average absolute deviation from Canada value amounted to 1.1 years. In this regard, the following aspects are worthy of note. Focusing on those provinces which have a life expectancy at age 15 that is above the national average (Newfoundland, Prince Edward Island, Manitoba, Saskatchewan, Alberta and British Columbia), two marked patterns can be seen in Table 5.1. Following a higher life expectancy (or lower mortality), the first pattern represents a working life expectancy that is also higher than the Canada level. The three provinces of Manitoba, Saskatchewan and Alberta fall into this category. The second pattern is observable in the other three provinces of Newfoundland, Prince Edward Island and British Columbia in which, notwithstanding their higher life expectations, the working life expectancies fall below the national average. The expected working life is comparatively short in Newfoundland (44.6 years) and British Columbia (46.6 years) suggesting markedly different patterns of labour force participation in these two provinces. Conversely, this is reflected in the average number of years expected to be spent in retirement in these provinces, that is, 12.1 years in Newfoundland and 10.2 years in British Columbia as compared to the average of 9.0 years for Canada as a whole.

Chart 5.1

# Differentials in Total and Working Life Expectancy of Males by Provinces, Canada, 1971



Source: Table 7.1

**TABLE 5.1. Total Life, Working Life and Retirement Life remaining at Selected Ages, Canada and the Provinces, 1971**

	Years of life	Years of labour force activity	Years of retirement
	$\overset{\circ}{e}_x$	$\overset{\circ}{e}w_x$	$\overset{\circ}{e}r_x$
Age 15:			
Canada . . . . .	56.3	47.3	9.0
Newfoundland . . . . .	56.7	44.6	12.1
Prince Edward Island . . . . .	56.8	47.1	9.7
Nova Scotia . . . . .	55.6	45.8	9.8
New Brunswick . . . . .	56.1	46.4	9.8
Quebec . . . . .	55.4	46.4	9.0
Ontario . . . . .	56.3	48.0	8.3
Manitoba . . . . .	57.3	48.2	9.1
Saskatchewan . . . . .	58.4	48.8	9.6
Alberta . . . . .	57.5	47.9	9.6
British Columbia . . . . .	56.9	46.6	10.2
Average absolute deviation <sup>1</sup> . . . . .	0.8	1.1	0.9
Average percentage deviation <sup>1</sup> . . . . .	1.4	2.3	10.0
Age 40:			
Canada . . . . .	33.2	24.0	9.2
Newfoundland . . . . .	33.2	21.4	11.9
Prince Edward Island . . . . .	33.9	24.8	9.1
Nova Scotia . . . . .	32.8	22.7	10.1
New Brunswick . . . . .	33.2	23.3	10.0
Quebec . . . . .	32.3	23.4	8.9
Ontario . . . . .	32.9	24.4	8.6
Manitoba . . . . .	34.2	24.8	9.3
Saskatchewan . . . . .	35.6	25.7	9.9
Alberta . . . . .	34.6	24.7	9.9
British Columbia . . . . .	34.1	23.4	10.7
Average absolute deviation <sup>1</sup> . . . . .	0.8	1.0	0.8
Average percentage deviation <sup>1</sup> . . . . .	2.4	4.2	8.7
Age 60:			
Canada . . . . .	17.0	7.7	9.3
Newfoundland . . . . .	16.8	6.3	10.5
Prince Edward Island . . . . .	17.6	8.6	9.0
Nova Scotia . . . . .	16.8	7.5	9.3
New Brunswick . . . . .	17.1	7.3	9.7
Quebec . . . . .	16.2	7.1	9.1
Ontario . . . . .	16.6	7.9	8.7
Manitoba . . . . .	17.7	8.2	9.5
Saskatchewan . . . . .	19.0	9.3	9.7
Alberta . . . . .	18.1	8.3	9.8
British Columbia . . . . .	17.8	7.2	10.6
Average absolute deviation <sup>1</sup> . . . . .	0.7	0.7	0.5
Average percentage deviation <sup>1</sup> . . . . .	4.1	9.1	5.4

<sup>1</sup> Deviation of the provincial figures from the national figures.

Source: Based on Tables 1 to 11 (Part A).



The provinces with a life expectancy at age 15 that is lower than the national average, Nova Scotia, New Brunswick and Quebec, share the third pattern representing a shorter working life expectancy ranging from 45.8 to 46.4 years. No province in this category presents the contrast of a higher working life expectancy than the Canada average. At the same time, it is interesting to observe that Ontario, which has virtually the same total life expectancy as the nation, reveals a higher working life expectancy of about 48.0 years or 0.7 years more than the national average of 47.3 years.

With regard to the average retirement life expectancies, the provincial figures shown in Table 5.1 present a different picture from the working life expectations in the provinces. The variations, expressed as percentages of the national values at specified ages, decline with advancing age. Thus, the average deviation which amounts to 10% at age 15, drops thereafter to 8.7% at age 40 and again to 5.4% at age 60. In the following pages, attention will be devoted to an examination of the extent of variations in accession and separation rates since these are closely related to the provincial differences in working life and retirement.

### **Differences in Accession Rates**

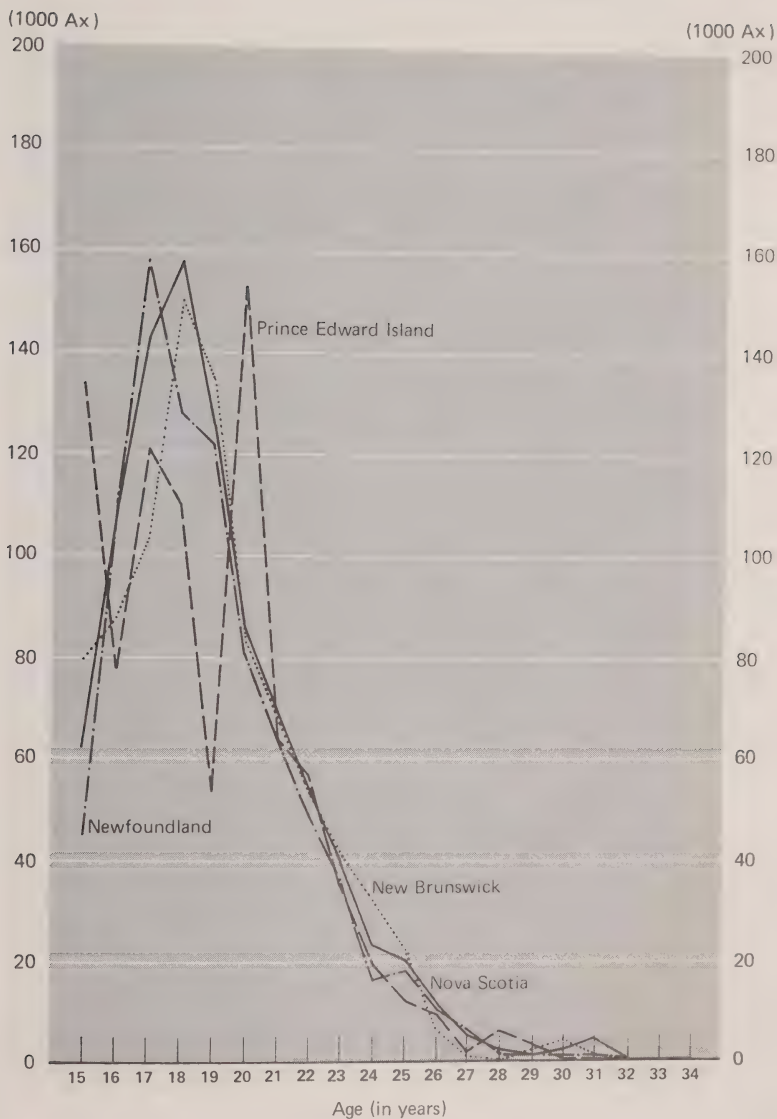
The interprovincial deviations in accession rates by age are presented in Table 5.2 and Chart 5.2. An examination of both the average absolute and percentage deviations reveals marked differences for all ages, except the ages 21 and 22 for which the labour force entry rates are nearly uniform from province to province. Before age 21, the rate at which males enter the labour force varies widely across the country. At age 15, for example, accession to the labour force is at its lowest rate, approximately 36.0 per thousand in Manitoba, and at its highest rate, approximately 133.9 per thousand in Prince Edward Island. Similar wide variations are found at ages 16, 17 and 18 reflecting, among other factors, the differences in school enrolment and labour market conditions. The widest deviation, in absolute terms, is observed for age 19 with accession rates ranging from 142.8 per thousand in Ontario to 52.9 per thousand in Alberta. Entry at age 19 which marks roughly the beginning of university education is, to a varying degree, governed by the number of students in universities, the availability of part-time job opportunities, differential mortality and, a host of other factors that have a bearing on the stationary population and stationary labour force from which these accession rates are derived.

The interprovincial variations in accession rates after the age 25 tend to lessen in absolute terms with advancing age. In general, the absolute measure of deviation may be more meaningful than the relative measure in the examination of the provincial variations in accession rates. Thus, on the basis of the absolute measure, these differentials may be summarized as follows: the interprovincial differences in accession rates are wide during the teens and gradually decrease in the twenties. The ages 20 - 24 display nearly uniform rates of entry across Canada.



Chart 5.2

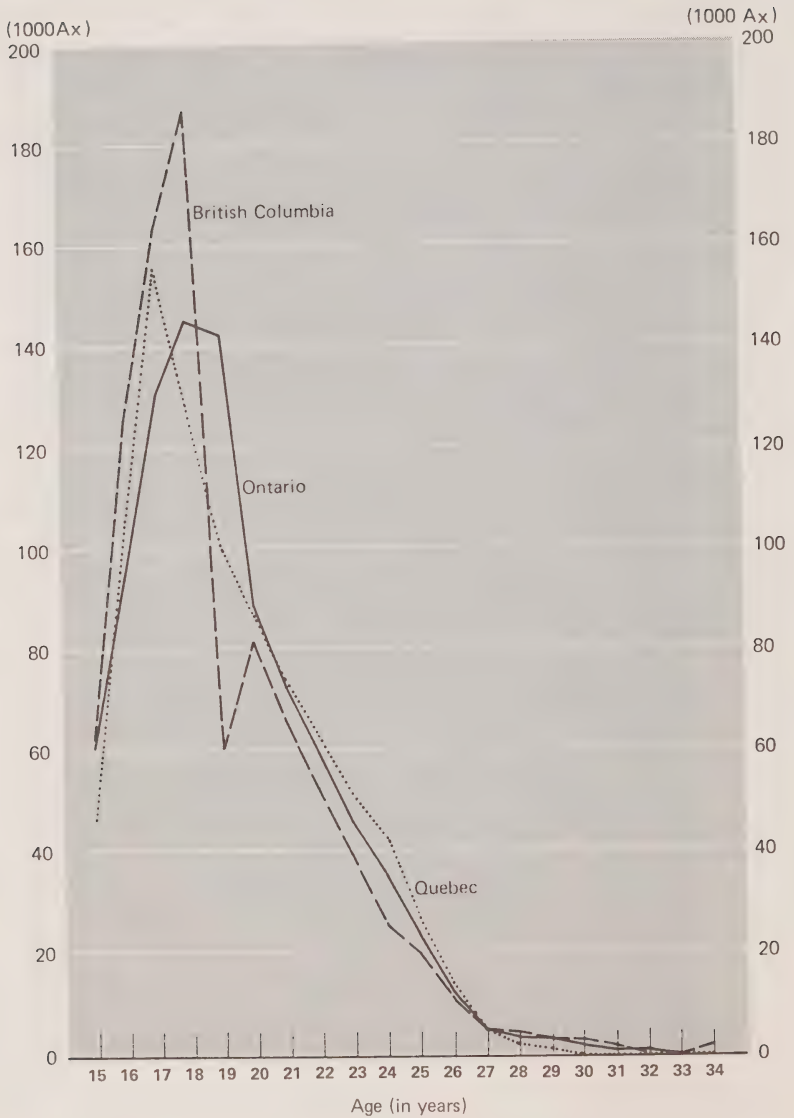
### Annual Rate of Accession to the Labour Force by Age and Provinces, Canada, 1971



Source: Tables 2 to 11, part B.

Chart 5.2

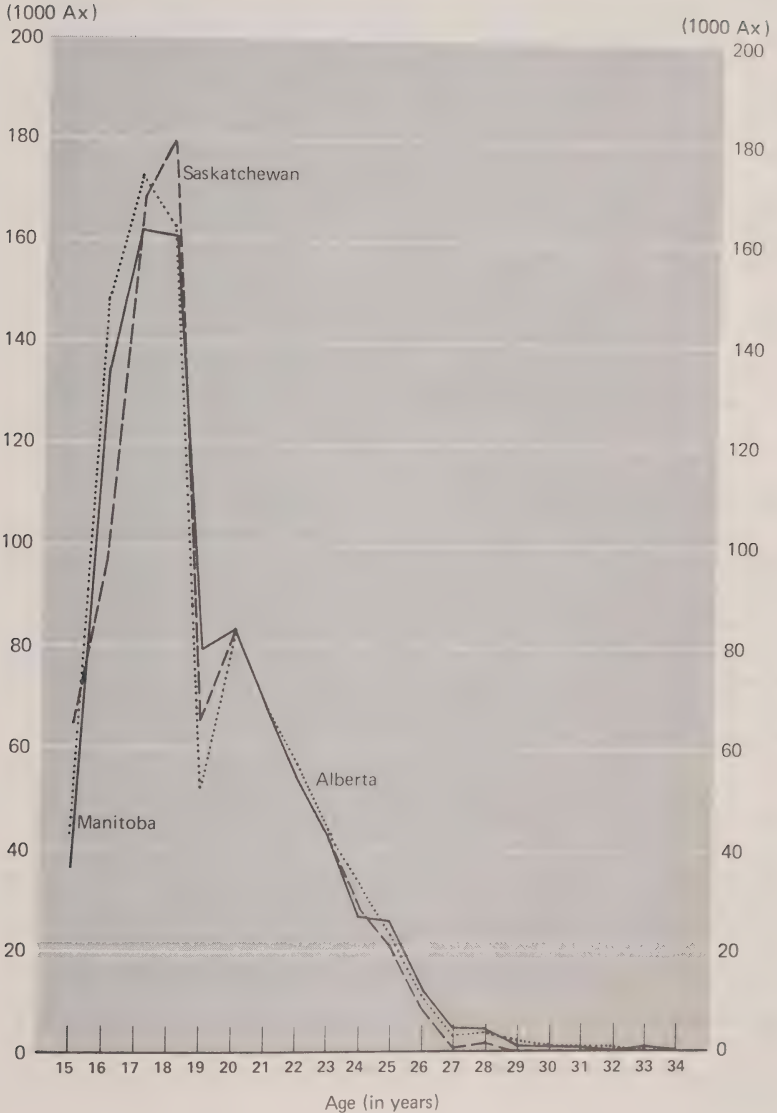
**Annual Rate of Accession to the Labour Force  
by Age and Provinces, Canada, 1971 (continued)**



Source: Tables 2 to 11, part B.

Chart 5.2

# Annual Rate of Accession to the Labour Force by Age and Provinces, Canada, 1971 (concluded)



Source: Tables 2 to 11, part B.

**TABLE 5.2. Average Deviation of Provincial Labour Force Accession Rates from Canada Rates by Age, 1971**

Age	Average absolute deviation	Average percentage deviation
15 years . . . . .	16.4	29.9
16 " . . . . .	16.7	15.5
17 " . . . . .	17.8	12.0
18 " . . . . .	19.2	13.1
19 " . . . . .	32.8	30.1
20 " . . . . .	9.4	10.8
21 " . . . . .	4.0	5.6
22 " . . . . .	4.3	7.3
23 " . . . . .	5.2	11.3
24 " . . . . .	7.8	22.1
25 " . . . . .	4.4	17.6
26 " . . . . .	3.5	25.0
27 " . . . . .	1.8	60.0
28 " . . . . .	1.6	53.3
29 " . . . . .	1.1	55.0
30 " . . . . .	0.9	90.0

Source: Based on Tables 1 to 11 (Part B).

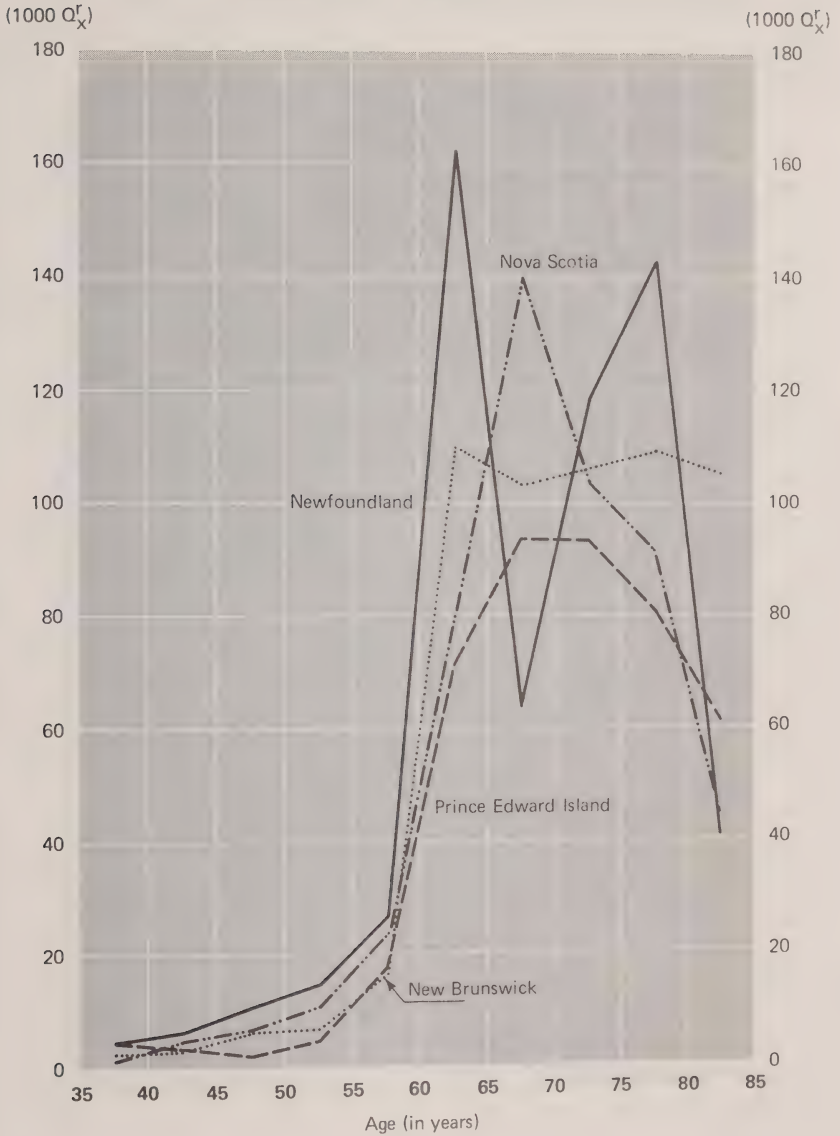
### Differences in Separation Rates

Withdrawal from the labour force due to death and due to retirement are dealt with separately in this study. In Table 5.3, which shows the deviation measures by age groups, the extent of interprovincial variation (in absolute terms) is relatively low until age 54; nevertheless, the pattern shows a consistently higher difference in separations due to retirement than in separations due to death. This pattern of greater geographical variation in retirements not only persists beyond age 54, but also becomes more pronounced at the old ages particularly in the groups 60 - 64 and 65 - 69.

To further consider the age group 60 - 64, the annual retirement rates, which run two to three times greater than the attrition rates due to mortality, vary among provinces from as low as 68.3 per thousand in Saskatchewan to as high as 162.2 per thousand in the labour force in Newfoundland. For the age group 65 - 69, the range is between 68.3 per thousand in Saskatchewan and 162.2 per thousand in Newfoundland. Although age is an important factor, the retirement rate is also governed by other factors such as pension schemes, the labour market conditions and so on. Some sectors of the economy may afford opportunities to work for a number of years after 60 (e.g. the agricultural sector and the self-employed). Other sectors may not (e.g. industries in which skill requirements change markedly over time and in which the old may find their skills obsolete).

Chart 5.3

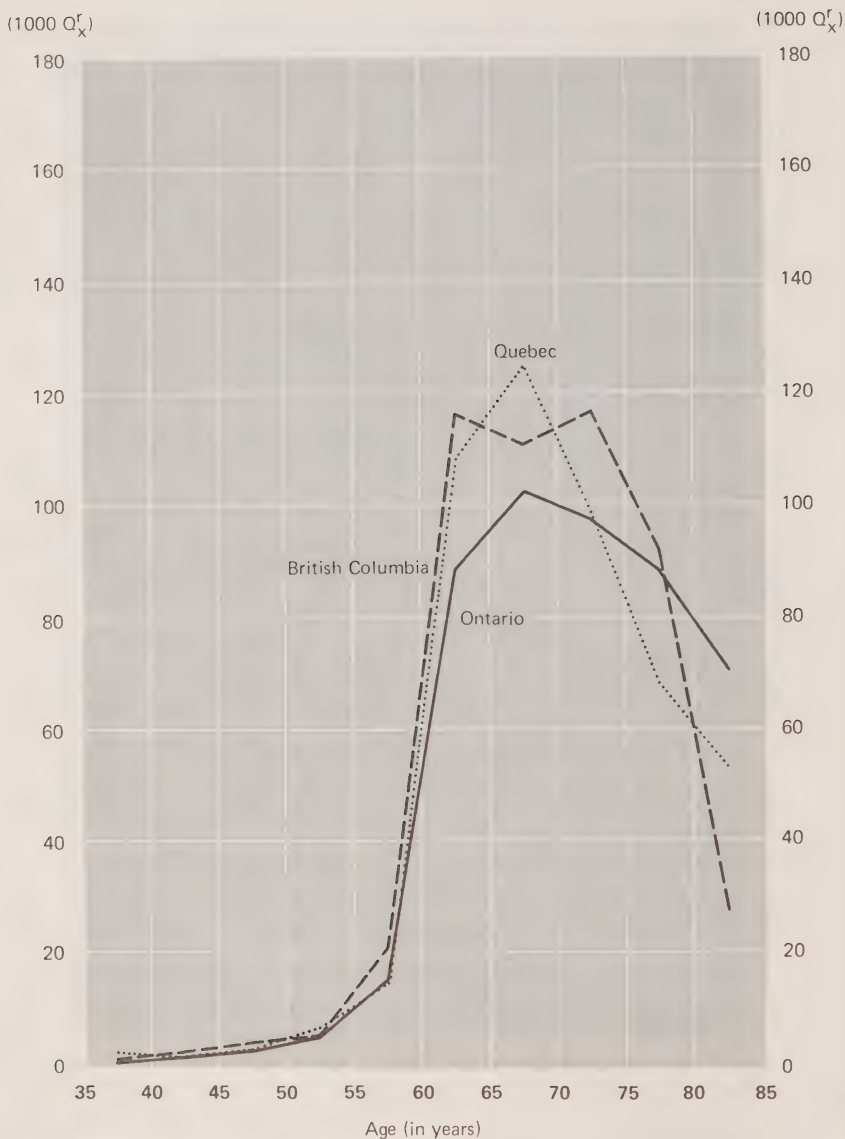
# Annual Rate of Retirement from the Labour Force by Age and Provinces, Canada, 1971



Source: Tables 2 to 11, part B.

Chart 5.3

**Annual Rate of Retirement from the Labour Force  
by Age and Provinces, Canada, 1971 (continued)**

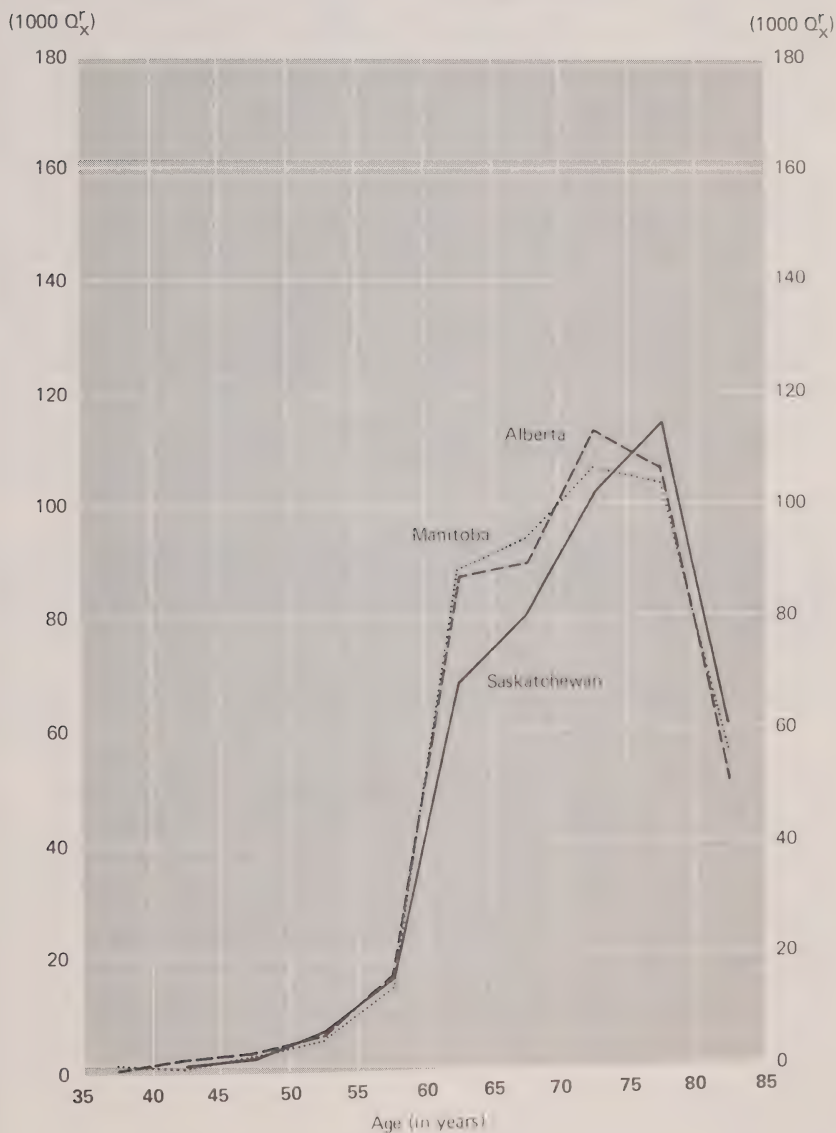


Source: Tables 2 to 11, part B.



Chart 5.3

# Annual Rate of Retirement from the Labour Force by Age and Provinces, Canada, 1971 (concluded)



Source: Tables 2 to 11, part B.

**TABLE 5.3. Average Deviation of Provincial Labour Force Separation Rates due to Death and Retirement from Canada Rates by Age, 1971**

Age group	Average absolute deviation		Average percentage deviation	
	Separation due to death	Separation due to retirement	Separation due to death	Separation due to retirement
	$1,000 Q_x^d$	$1,000 Q_x^r$	$1,000 Q_x^d$	$1,000 Q_x^r$
35-39 years . . . . .	0.2	1.2	8.7	109.1
40-44 " . . . . .	0.3	1.3	8.1	68.4
45-49 " . . . . .	0.4	1.8	6.7	56.3
50-54 " . . . . .	0.7	1.9	7.2	29.7
55-59 " . . . . .	1.4	2.8	9.2	17.2
60-64 " . . . . .	2.1	20.6	9.2	21.4
65-69 " . . . . .	2.8	17.5	8.1	16.5
70-74 " . . . . .	4.3	6.9	8.4	6.7
75-79 " . . . . .	6.2	16.5	8.1	18.4
80-84 " . . . . .	9.9	21.6	8.6	30.0

Source: Based on Tables 1 to 11 (Part B).

The interprovincial differences in separation rates due to death are about the same for each age group according to the measure of average percentage deviation. This pattern is due to the slight variations in mortality from province at these ages.

## CHAPTER 6

### CONCLUSION

The working life table bears the distinction of being an analytical tool as well as a source of new information. Emphasis has generally been placed on its analytical role for considering the interplay of mortality and labour force patterns within a country. It is not unfair to say that the information it yields, is rarely fully exploited. This study in addition to giving attention to the analytical role has also attempted to highlight the information contained in the working life table for a study of labour force structure and dynamics. This study has also added a new dimension to the framework by constructing cohort working life tables. It may be of worth to exploit further the use of the working life table as either a projection tool or as an analytical tool in a number of directions.

The 1971 working life table indicates an average expectation of 47.3 years for Canadian males in the labour force, or, in other words, about one-half year less than the length of working life anticipated in 1961. Considering that the total life expectation has remained virtually stable, the decline in the length of working life means an increase of approximately 0.8 years in the retirement life over the past ten years. Looking ahead fifteen years, it is likely that the working life expectancy could further decline to 46.8 years and the retirement life could rise to 9.7 years. The chief explanation for these changes, in the past as well as the future, lies in the changing pattern of labour force participation and in particular, the trend toward earlier retirement.

Fifteen years from now, a man who has currently entered the labour force may have gone through a different pattern of mortality experience and of labour force attachment than might have a man aged 30 in 1971. Therefore, a new type of working life table has been calculated based upon probable generation patterns in mortality and labour force participation. Such a table, called the cohort working life table, indicates that the working life of a man entering the labour force in 1971 (i.e. born in 1956), may be even shorter than the preceding estimate of 47.3 years and, in consequence, the retirement life longer than 10 years.

With regard to the dynamic aspects of the labour force, the 1971 working life table reveals that 60% of the total accessions take place before age 19. Secondly, the average age of entry into the labour force has gone up over the past decade from 17.5 to 19.1. The retirement pattern has also undergone important changes. To this effect, 43% of the total retirements take place between the ages 60 and 64 and another 23% between 65 and 69. The corresponding percentages were 34 and 28 respectively in 1961. The mean age of retirement has decreased from 64.3 years in 1961 to 63.0 years in 1971. The rate of attrition resulting from death has declined at all ages. Of the total withdrawals in a year, 37% were due to deaths and 63% due to retirements.

The tables of working life calculated for the provinces in this study present considerable variations from the national pattern. Thus, the working life in 1971 is found to vary from 44.6 years in Newfoundland to 48.8 years in Saskatchewan. Differences in mortality as well as in labour force behaviour lie at the root of these variations, and often the latter explain more of the interprovincial differentials in working life expectancy. As an example, Ontario has a lower total life expectancy at age 15 but shows a higher working life expectancy of about 48.0 years compared with the national average of 47.3 years. In contrast, British Columbia, notwithstanding a higher life expectancy, has a lower working life expectancy. With regard to labour force accessions, the interprovincial differences are wide among 15 - 19 years, while the ages 20 - 24 display nearly uniform rates of entry across Canada. The retirement patterns differ widely among the provinces. Among men aged 60 - 64, the annual retirement rate varies between 68.3 per thousand labour force in Saskatchewan and 162.2 per thousand in Newfoundland. Several factors such as leisure, pension schemes and labour market conditions may account for these differences, but a discussion of these lies beyond the scope of the present study.

In addition to the interprovincial differences which are briefly dealt with in this study, future studies could venture into the differentials with respect to rural/urban or metropolitan areas, and economic regions. The information contained in the working life tables presented here can be utilized to approximate the probable separations due to death and retirement from any given industry/occupation. No doubt the use of over-all rates of separation represents a crude approximation; nevertheless, the results would be of great value in assessing industry/occupational replacement needs until more refined statistics become available on industrial/occupational mortality and on the differential rates of retirement.

The present study was solely concerned with the length and pattern of working life of males in Canada. In recent decades, the pattern of female labour force participation has become an important factor governing the growth of labour force. In this context, tables of working life for females, although they present many difficult problems, are worthy of development in future studies.

## APPENDICES





## APPENDIX A

### Concepts, Definitions and Methodology

A working life table is essentially an extension of the life table used in both the actuarial and demographic sciences. The concepts, definitions and methodology, as employed in working life tables, are akin to those employed in life tables. This similarity applies equally to the interpretation and use of the tables. The main difference, however, lies in the fact that a life table concisely summarizes a given set of mortality conditions and their implications while a working life table summarizes mortality and labour force participation in a given country. For this reason, the latter is also known as a "double decrement table". The following pages are devoted to a brief review of life table and working life table concepts, definitions and methodology so as to afford an understanding of their nature and functions as well as their limitations in analytical and related uses.

#### Life Table

The life table<sup>1</sup> is essentially a convenient tool that summarizes the mortality experience of a population during a specified period and indicates the longevity or the average number of years of life that a person may expect to live at birth or at any given age. It also provides an indication of the chances that a person may die before reaching a certain age. The basic information required for constructing a life table is a schedule of mortality rates — i.e. number of deaths per thousand mid-period population ( $m_x$ ) — for single ages or specified age groups ( $x$ ) of the population.<sup>2</sup> Generally, starting with a hypothetical group of 100,000 persons born alive at the same time, the life table is prepared by a series of arithmetic operations which reveal the number of survivors in this initial group who move to successive ages, and the average number of years of life remaining to these survivors. In the construction of life tables, the only factor considered is mortality. It is assumed that there is no migration into or out of the original population.

As mentioned previously, the mortality indicator required for a life table is a schedule of age-specific death rates. Following two approaches to the measurement of mortality, based upon period and generation (or cohort), it is possible to conceive two types of life tables. The first and most widely known is the **current** (or period) life table which makes use of mortality data for a given

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<sup>1</sup> For more details, see A.J. Jaffe, *Handbook of Statistical Methods for Demographers* (Washington, D.C.: United States Government Printing Office, 1951), pp. 1 - 41; and Henry S. Shryock, Jacob S. Siegel, and Associates, *The Methods and Materials of Demography* (Washington, D.C.: United States Government Printing Office, 1973), pp. 429 - 461.

<sup>2</sup> Life tables for Canada are usually prepared by using death rates by single years of age. Life tables can also be based on rates by five- or ten-year age groups. These are known as abridged life tables.

year or specified period ranging from three to ten years.<sup>3</sup> In the current life table, the mortality experience of a given period is assumed to apply to the whole cohort and the same schedule of death rates is applied until the last surviving member of the original group finally dies at 100 years of age or older. In reality, this assumption is far from correct as changes are bound to occur. Indeed, the advances that Canada has witnessed in medical knowledge, control of diseases and improvements in general health have lead to a consistent decline in the death rate. If the past can serve as a guide to the future, the initial cohort of the life table may, fifty years from now, experience a rate of mortality that is quite different from the rate for the present 50-year old male used in the construction of a current life table. Failure to take account of this changing pattern of mortality in real life is a great limitation of the current life table. Notwithstanding this weakness, the current life table has proved very valuable and found widespread use in actuarial and demographic work. The important advantage is that the current life table is based on observed data and does not require forecasts of future mortality rates.

The second type of life table is the **generation** or **cohort** table. This table, unlike the preceding category, is based on the mortality experience of a given group or cohort of persons born in a particular year or period. Thus, if the generation life table relates to persons born in 1921, the mortality experience of this group at age five would relate to persons five years of age in 1926 and the mortality rate, which is the basic input needed for the calculation of the life table, would be based on death statistics for the five-year olds in 1926. Similarly, to follow the mortality experience of this generation, the death rate at age ten would be based on death statistics for ten-year olds in 1931, and so on. In contrast, the 1921 current life table was based solely on the death rates for different ages in the same year. The generation life table is thus more meaningful and reflects the real mortality conditions as experienced by each cohort over its life span. However, the construction of a generation life table poses data problems requiring a long time series. In point of fact, to prepare a cohort life table for persons born in 1921, mortality data spanning more than a century (or beyond 2021 A.D.) are needed. This immediately points to the difficulty of constructing the generation life table for the 1921 cohort, or to put it differently, this clearly emphasizes the practical advantage of the current life table. Generation life tables, however, can be constructed by forecasting the future mortality for the current survivors of a specified cohort. To follow the cited example, the completion of the generation life table for persons born in 1921 would require mortality predictions for the next half century. Predictions of mortality, or of other social forces, are not possible, and therefore, the generation life table should be viewed only as estimates, subject to a varying degree of error, depending upon the availability of actual data and the quality of mortality projections.

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<sup>3</sup> It is not uncommon to adopt the average mortality experience for periods longer than one year to reduce the effects of short-term fluctuations. The Canadian life tables are generally based on mortality statistics for three-year periods centred on the census years (i.e., 1950-52, 1955-57, 1960-62, 1965-67 and 1970-72).

Just as mortality rates vary over time, so do they differ among different socio-economic groups, regions and by sex. Usually, separate life tables are constructed for males and females in view of known differentials and the availability of data by sex. From the point of view of the working life table, it would be useful to compile tables for different industrial or occupational groups which are subject to different mortality patterns. But, the working life tables presented here are based on the mortality experience of the **total male population** even though it may be conceptually more appropriate to use life tables pertaining to the labour force or groups within it. Lack of data unfortunately, precludes such undertakings in this study.

Using standard symbols, the elements of the life table and their relationships to each other are as follows:

$m_x$  — the number of deaths per 1,000 mid-year population in the ages between  $x$  and  $x + 1$

$q_x$  — the probability that a person of exact age  $x$  (that is, on his  $x^{th}$  birthday) will die before attaining age  $x + 1$

$p_x$  — the probability that a person of exact age  $x$  will survive to age  $x + 1$

$l_x$  — the number of persons who survive to exact age  $x$  out of the original 100,000 alive at birth

$d_x$  — the number of deaths of persons between exact age  $x$  and exact age  $x + 1$  or, expressed differently, the number of persons who survive to exact age  $x$  but die before attaining exact age  $x + 1$

$L_x$  — the combined total number of years of life lived in the interval between exact age  $x$  and exact age  $x + 1$  by persons who have survived at least to exact age  $x$ ; alternatively, the number of persons who were  $x$  years old at last birthday at any given instant in a stationary population which experiences in perpetuity the mortality conditions of the life table and the condition that there are 100,000 live births per annum spread evenly throughout the calendar year

$T_x$  — the combined total number of years of life remaining to persons who have survived to exact age  $x$ ; in the stationary population just described this is equivalent to the total number of persons of exact age  $x$  or older

$^o e_x$  — the mean expectation of life at exact age  $x$ , that is, the average number of years of life remaining to persons alive at exact age  $x$ .

More precise definitions are implied by the following relationships:

$$q_x = \frac{d_x}{l_x}$$

$$p_x = \frac{l_x + 1}{l_x} = 1 - q_x$$

$$l_x = l_{x-1} p_{x-1}$$

$$d_x = l_x - l_{x+1}$$

$$T_x = \sum_{n=0}^{\infty} L_{x+n} = T_{x+1} + L_x$$

$$e_x = \frac{T_x}{l_x}$$

If deaths are taken to be distributed uniformly throughout each age interval the following may be deduced:

$$L_x = 1/2(l_x + l_{x+1})$$

This assumption is generally considered to be satisfactory for all but the youngest ages. Since the concern here is with the population of working age, it may be accepted without reservation.

The working life calculations described in the next sections are based primarily on  $L_x$  rather than  $l_x$  values. For convenience later,  $Q_x$ , the rate or probability of death associated with  $L_x$  (analogous to  $q_x$ , the probability associated with  $l_x$ ) is defined:

$$Q_x = \frac{L_x - L_{x+1}}{L_x}$$

In conclusion, it may be noted that all of the quantities defined above can be calculated from the  $l_x$  values. Given the  $l_x$  column, and the assumption that deaths are distributed uniformly within each year, the remainder of the life table can be derived by simple arithmetic operations.

## Working Life Table

At the conceptual level, the working life table represents an extension of the life table described in the previous pages. It is a device designed to respond to questions such as "what is the expected average number of years of working life remaining to a person of a given age? ". The table can additionally indicate, for



instance, the probability that a person aged, for example, 30 will still remain in the labour force (or working population) until he is aged 40, or alternatively, the probability that such a person will leave the labour force before reaching the age of 40.

The working life table is constructed in the following way: the life table population ( $L_x$  column) has made mortality allowances among 100,000 persons born alive at successive ages. The number of persons in this stationary population at each age who are expected to be in the labour force is then calculated by applying the respective age-specific labour force participation rates. As before, migration is ruled out, and only members of the stationary population may enter or leave the labour force. The total number of years that a person spends between entry and exit is here referred to as the "working life". Thus defined, it is important to note that the working life is not equivalent to the number of years of actual work, for it may include periods of unemployment and part-time employment, and especially in the young age groups, even periods devoted to education and training.

Ideally, the data requirement for the construction of working life tables would be records (rates) of entries into and exits from the work force at each age in the same manner as death statistics are available and used in the calculation of life tables. In practice, such records are not generally available, and therefore the working life table can be based instead upon the proportion of population in the labour force at each age (i.e. labour force participation rates). This is also known as "**the worker rate**" ( $w_x$ ). Though far from ideal type of information, these rates which are readily available, could be used in the construction of working life table as illustrated by John Durand and Seymour Wolfbein.<sup>4</sup> This type of information (i.e. labour force participation rates) has since been used without exception as the basis for the construction of working life tables. It has meant a basic assumption that there is no exit from the labour force except for reasons of death or retirement. Under this assumption, changes in the labour force from one age to the next closely represent, after allowance is made for mortality, either the gross number of entrants to the labour force or the gross number of retirements. This assumption has so far proved not unreasonable for males although the error of approximation may vary considerably with respect to age and other characteristics of the population.

The assumption that there is no movement in both directions (i.e. net flows approximate gross flows) may be less tenable in respect to older age or specific groups. A man may, temporarily withdraw himself from the labour force owing to disability, illness or any number of other reasons, and may return at a later date. Men aged 60 and over, may move in and out of jobs depending upon, among other

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<sup>4</sup> John D. Durand, *The Labor Force in the United States, 1890-1960* (New York: Social Science Research Council, 1948), pp. 259 - 265; and Seymour L. Wolfbein, "The Length of Working Life", *Population Studies*, Volume III, December 1949, pp. 286 - 294.

things, employment conditions in the labour market. It is essential to note here that exit from the labour force may not be a once-and-for-all event as is death and that the working life table is markedly affected, and is subject to more definitional ambiguity than the life table. It is important also to examine carefully the labour force data, and often to adjust or smooth them for quality, internal consistency and comparability over time.<sup>5</sup> These adjustments are sometimes carried out employing different sources of data, for example, Census, Labour Force Survey and sometimes, enrolment statistics. Appendix B is devoted to the quality of 1971 Census data on the labour force and the adjustments made within them.

Once the required basic information, that is, the schedule of labour force participation or worker rates by age ( $1000 w_x$ ) is available, the construction of the working life table is straightforward. The various columns of the working life table and their relations given below were derived by employing the standard symbols used. The concepts and definitions used in this study are the same as those adopted by Seymour Wolfbein in his work on United States working life tables and recently applied with only minor exceptions to Canada by Frank Denton and Sylvia Ostry.<sup>6</sup> As with the life table discussed earlier, the subscript  $x$  is used in all symbols to denote age. The following is adapted, for ease of reference from the aforementioned study for Canada:

$w_x$  – the “worker rate” or ratio of the number of persons in the labour force to the number of persons in the population in the interval between exact age  $x$  and exact age  $x + 1$

$lw_x$  – this is analogous to  $l_x$ ; it is the number of persons who survive and are in the labour force at exact age  $x$  from the original 100,000 alive at birth

$Lw_x$  – this is analogous to  $L_x$ ; it is the combined total number of years of labour force activity experienced in the interval between exact age  $x$  and exact age  $x + 1$  by persons who have survived at least to exact age  $x$ ; alternatively, it is the number of persons in the labour force who were  $x$  years old at their last birthday at any given instant in a stationary population that experiences in perpetuity the mortality conditions and worker rates of the working life table and the condition that there are 100,000 live births per annum spread evenly throughout the calendar year

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<sup>5</sup> For a discussion of conceptual and definitional problems associated with measuring the labour force in Canada, see Frank T. Denton and Sylvia Ostry, *Historical Estimates of the Canadian Labour Force* (Ottawa: The Queen's Printer, 1967), pp. 1 - 49; and Sylvia Ostry, *Unemployment in Canada* (Ottawa: The Queen's Printer, 1968), pp. 71 - 76.

<sup>6</sup> See footnote 1, p. 67 and Frank T. Denton and Sylvia Ostry, *Working-Life Tables for Canadian Males* (Ottawa: The Queen's Printer, 1969).



- $A_x$  – the rate of accession to the labour force; this is the (net) number of persons entering the labour force in the interval between  $x$  and  $x + I$  (after allowance for mortality) expressed as a ratio to the total stationary population  $x$  years old at last birthday
- $Q_x^s$  – the rate of separation from the labour force resulting from all causes; this is the (net) number of persons leaving the labour force, for whatever reasons, in the interval between  $x$  and  $x + I$ , expressed as a ratio to the total labour force of age  $x$
- $Q_x^d$  – the rate of separation from the labour force resulting from death; this rate is defined in the same way as  $Q_x^s$ , of which it is a component
- $Q_x^r$  – the rate of separation from the labour force resulting from retirement; this rate (which is a net rate) is also defined in the same way as  $Q_x^s$ , of which it is a component; the word “retirement” is used to represent all forms of withdrawal from the labour force other than death
- $x^*$  – the age at which the worker rate attains (or first attains) its maximum value
- $Tw_x$  – the combined total number of years of labour force activity remaining to persons who have survived and are in the labour force at exact age  $x$
- $\circ ew_x$  – the mean expectation of working life at exact age  $x$  for persons in the labour force, that is, the average number of years of labour force activity remaining to persons alive and in the labour force at exact age  $x$
- $\circ er_x$  – the mean expectation of retirement at exact age  $x$  for persons in the labour force, that is, the average number of years of retirement in prospect for persons alive and in the labour force at exact age  $x$
- $Tw'_x$  – the combined total number of years of labour force activity remaining to persons who have survived to exact age  $x$ , whether or not they are in the labour force; in the stationary population this is equivalent to the total number of persons of exact age  $x$  or older who are in the labour force
- $\circ ew'_x$  – the mean expectation of working life at exact age  $x$  for all persons in the population, that is, the average number of years of activity in the labour force remaining to persons alive at exact age  $x$ , whether or not they are in the labour force

$\bar{e}r'_x$  – the mean expectation of non-labour force activity at exact age  $x$  for all persons in the population, that is, the average number of years outside the labour force in prospect for persons alive at exact age  $x$ , whether or not they are in the labour force<sup>7</sup>

$lw_x^*$  – hypothetical value of  $lw_x$  based on the maximum worker rate rather than the actual worker rate

$Lw_x^*$  – hypothetical value of  $Lw_x$  based on the maximum worker rate rather than the actual worker rate.

The subscript  $x$  is used to represent age. In discussing calculations involving cohorts, attention should be given to calendar time. Whenever necessary, the additional subscript  $t$  is employed for this purpose. In particular,  $w_{xt}$  is used for the worker rate at age  $x$  in year  $t$ .

The stationary population figures ( $L_x$ ) and the worker rates ( $w_x$ ) may be regarded as the basic inputs into the working life table. With one or two minor qualifications, all other quantities can be derived from these two series. The stationary labour force is given by the product of the two:

$$Lw_x = w_x L_x$$

Accessions for ages younger than  $x^*$ , the age at which the worker rate attains its maximum, are calculated from successive increases in the stationary labour force, adjusted for mortality. (Recall that  $Q_x$ , the relevant death rate, can also be derived from the  $L_x$  series.) For  $x^*$  and above, the accession rate is set equal to zero:

$$A_x = \frac{Lw_{x+1} - (1 - Q_x) Lw_x}{L_x} \quad (x < x^*)$$

$$A_x = 0 \quad (x \geq x^*)$$

It is assumed that all separations from the labour force prior to  $x^*$  are the result of death. For  $x^*$  and older, the assumption is further made that retirements are uniformly distributed within each year so that, on the average, an employed person would be exposed to the risk of death for only half of the year in which he retires. On this basis, the number of persons in the labour force exposed to the risk of death over the course of a full year is equivalent to the labour force at the

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<sup>7</sup> The term “retirement” is used in reference to persons in the labour force and the term “non-labour force activity” is used in reference to persons in the population; the latter is intended to cover time spent in early childhood, in school, etc., as well as in retirement.

start of the year minus half of the retirements during the year. Performing a little algebraic manipulation, the various relationships that determine the separation rates may then be written as follows:

$$Q_x^s = Q_x^d = Q_x \quad (x < x^*)$$

$$Q_x^r = 0 \quad (x < x^*)$$

$$Q_x^s = \frac{Lw_x - Lw_x + 1}{Lw_x} \quad (x \geq x^*)$$

$$Q_x^d = \frac{Q_x (2 - Q_x^s)}{2 - Q_x} \quad (x \geq x^*)$$

$$Q_x^r = Q_x^s - Q_x^d \quad (x \geq x^*)$$

The total and mean number of years of labour force activity remaining for the population as a whole at age  $x$  are obtained in a straightforward manner from:

$$Tw_x' = \sum_{n=0}^{\infty} Lw_x + n$$

$$ew_x' = \frac{Tw_x'}{l_x}$$

The corresponding calculations relating to persons in the labour force are similar for ages above  $x^*$ , the only difference being that  $l_x$  is replaced by  $lw_x$ . However, some modification of the formulae are necessary for those ages at which the worker rate has not yet reached its maximum. Only the working life of persons who have already entered the labour force is of interest here, hence, the contribution of future entrants should be eliminated. This is accomplished by calculating what the labour force would have been if the worker rate had already gained the maximum level and thereby using the results in place of the actual labour force figures. That is to say,  $lw_x$  is replaced by  $lw_x^*$  and  $Lw_x$  by  $Lw_x^*$  at the younger ages. Letting  $k$  be equal to  $x^* - x - 1$ ,

$$Tw_x = \sum_{n=0}^k Lw_x^* + n + \sum_{n=0}^{\infty} Lw_x^* + n \quad (x < x^*)$$

$$ew_x = \frac{Tw_x}{lw_x^*} \quad (x < x^*)$$

$$Tw_x = Tw_x' = \sum_{n=0}^{\infty} Lw_x + n \quad (x \geq x^*)$$

$$ew_x = \frac{Tw_x}{lw_x} \quad (x \geq x^*)$$

The  $lw_x$  and  $lw_x^*$  values are derived by linear interpolation between successive values of  $Lw_x$  and  $Lw_x^*$  on the assumption of uniformly distributed changes within year year.<sup>8</sup> Thus,

$$Lw_x^* = w_x^* L_x$$

$$lw_x = 1/2 (Lw_x + Lw_{x-1})$$

$$lw_x^* = 1/2 (Lw_x^* + Lw_{x-1}^*)$$

Lastly, the mean expected number of years outside the labour force is given by the difference between the mean expectation of life and the mean expectation of working life:

$$\overset{\circ}{er}_x' = \overset{\circ}{e}_x - \overset{\circ}{ew}_x'$$

$$\overset{\circ}{er}_x = \overset{\circ}{e}_x - \overset{\circ}{ew}_x$$

The mean expectation of life is the same for persons in the labour force as for the population as a whole by virtue of the assumption that mortality rates are the same for both groups.

## Cohort Table

By this time, it may have become evident that the foregoing conceptual framework connotes a **current** approach, that is, an approach based on a schedule of worker rates for a given period. As in the case of the life table, two types of working life tables can be conceived. These are: (a) current or period working life tables, and (b) cohort or generation working life tables. The current working life table, as described in the preceding pages, is based on a current life table and a set of current rates of male labour force participation. In contrast, the cohort working life table will be based on the actual mortality and labour force experiences of a group of persons born in a given period (i.e. birth-cohort). As is true of the generation life table, the cohort concept is more meaningful and theoretically superior. In practice, the compilation of a lifetime sequence of worker rates for a given cohort is extremely difficult, recognizing that the concepts and definitions of labour force have not been constant within the time period. Simultaneously, worker rates for certain age groups have been changing considerably in Canada and elsewhere. The static nature of a current working life table, and its failure to reflect these changes is a notable deficiency. To fill this gap, it is not impossible to construct a cohort working life table based upon

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<sup>8</sup> Whereas in the case of the  $lw_x$  series it was necessary to interpolate between successive  $Lw_x$  figures, in the case of the  $l_x$  series figures were available from the official life tables and these were used.

forecasts of mortality and worker rates per relevant age; however, it will undoubtedly contain errors resulting from such forecasts for both worker rates and mortality.

Apart from problems concerning the availability of data and the need for forecasts, the conceptual framework for a cohort working life table remains the same; nevertheless, the basic inputs differ involving a generation life table and a set of cohort specified labour force participation rates. Symbolically, an additional subscript  $t$  is used to denote the year of birth of the cohort. For example, certain of the important columns of a cohort working life table could be represented as follows:

$w_{xt}$  — the "worker rate" or ratio of the number of persons in the labour force to the number of persons in the population in the interval between exact age  $x$  in year  $x + t$  and exact age  $x + l$  in year  $x + t + l$

$lw_{xt}$  — this is analogous to  $lw_x$ ; it is the number of persons who survive and are in the labour force at exact age  $x$  in year  $x + t$  out of the cohort of 100,000 born alive in year  $t$

$ew_{xt}^{\circ}$  — the mean expectation of working life at exact age  $x$  in year  $x + t$  for **persons in the labour force** who are born in year  $t$ .

Similarly, other columns could be interpreted with reference to the specific cohort. The calculation of these quantities is similar to that followed in constructing the current working life tables.





## APPENDIX B

### Data Sources and Adjustments

The basic data needed for the construction of the current working life table are: (a) the current life table or, in particular, the stationary population ( $L_x$  column), and (b) the schedule of labour force participation rates or worker rates by age ( $1000 w_x$ ). To estimate the cohort working life table, the same type of information on a cohort basis is required, i.e. (a) a generation or cohort life table (i.e.  $L_{xt}$  column), and (b) a schedule of worker rates for the relevant birth or labour force cohorts ( $1000 w_{xt}$ ).

### Mortality Statistics

The stationary or life table populations used here are drawn from the official life tables for Canada and the provinces based upon the population of 1971 Census<sup>1</sup> and the death statistics for 1970-72. Complete life tables are available for all the provinces except Prince Edward Island. However, an abridged life table giving the stationary population by five-year age groups ( $5L_x$ ) is available for Prince Edward Island. For the purpose of the present study, this life table population was distributed by single years of age by applying the Sprague multipliers.<sup>2</sup>

In order to estimate cohort working life tables, a series of generation or cohort life tables was prepared in this study. These tables were constructed on the basis of the Greville's method using the registration data from the Vital Statistics system. As indicated previously, it is necessary to forecast mortality for older age groups in order to complete the generation life table for any given cohort, and for this purpose, the mortality projections<sup>3</sup> prepared in connection with the recent Statistics Canada population projections were used. These projections extend to 1986 and thereafter remain unchanged. In order to construct generation life tables, it is essential to have projections for even a longer period. Therefore, a further assumption was made here, namely, that mortality would decline beyond 1986 and would attain by 2050 the lowest rates of mortality by age as indicated

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<sup>1</sup> Statistics Canada, *Life Tables, Canada and Provinces, 1970-1972* (Ottawa: Information Canada, 1974), pp. 1-54. These are the latest official life tables for Canada and provinces published by Statistics Canada. Other life tables for the previous periods published by Statistics Canada (then Dominion Bureau of Statistics), are: *Canadian Life Tables, 1931*, Census Monograph No. 13 (by Nathan Keyfitz); *Life Tables for Canada and Regions, 1941 and 1951*; *Canadian Life Tables, 1950-1952 and 1955-1957*; *Canadian Life Tables, 1960-1962*; *Provincial and Regional Life Tables, 1960-1962*. For convenience, the practice has been adopted of referring to the tables according to the census year on which they are centred (e.g., 1961 rather than 1960-62).

<sup>2</sup> For similar application, see Statistics Canada, *Population Projections for Canada and the Provinces, 1972-2001* (Ottawa: Information Canada, 1974), p. 21. Also A. J. Jaffe, *op. cit.*, Chapter 2.

<sup>3</sup> Statistics Canada, *Population Projections for Canada and the Provinces, 1972-2001* (Ottawa: Information Canada, 1974), pp. 15-21.

in the Maximum Life Expectancy Table (MLET) projected for Canada.<sup>4</sup> According to these projections, the expectation of life at birth would approximate 70.2 years for males in 1986 and 72.8 years by 2050. The mortality rates for the intervening years were obtained by linear interpolation of the projections for 1986 and 2050 in order to complete the generation life tables for males born since 1931. These generation or cohort life tables are, to our knowledge, the first such series prepared for Canada, and are presented in Part II of this study.

## Labour Force Data

Participation rates and death rates by age are the basic data used in preparing working life tables. The purpose of this section is to present the estimates of and adjustments to the 1971 Census male labour force participation rates or worker rates by age which are used in calculating the working life tables for Canada and the provinces.

Two steps were taken in determining the types of adjustments to be made: first, it was necessary to ascertain whether the data from the 1971 Census contained any major anomalies that would require corrections to be applied and secondly, the participation rates by age had to be adjusted in terms of the requirements for the construction of working life tables. These meant the exclusion of students in the labour force on a purely temporary basis during the summer, and the elimination of erratic fluctuations in the participation rates from one age to another.

The study of the 1971 Census labour force<sup>5</sup> by Amy Kempster served as a point of departure for the first step. Comparing the census data with those derived from the monthly Labour Force Survey, she detected evidence of underenumeration in ages 25 to 64 of the male labour force in Quebec. The study also revealed that for most provinces the participation rates for the older ages (65 and over), based on the census, were relatively higher than those based on the survey. These anomalies in the male labour force data called for the application of corrective factors.

The 1971 Census labour force is defined to include people (inmates of institutions excluded) 15 years and over who, during the week prior to enumeration:

worked for pay or profit;

worked without pay in the operation of a family business or farm;

looked for work;

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<sup>4</sup> K.S. Gnanasekaran, "Mortality Trends and Projections by Causes of Death in Canada, 1950-1990", *Harvard Actuarial Conference Papers*, Boston, 1973, p. 50.

<sup>5</sup> A.J. Kempster, *Background Information on the 1971 Census Labour Force Data*, Population and Housing Research Memorandum, PH-EC-4, 1, 1973.

were on temporary lay-off; or

had a job from which they were temporarily absent by reason of illness, vacation, strike and so forth.

The Labour Force Survey procedures differ in some respects from those employed in the 1971 Census. In order to grasp fully the nature of the adjustments based on the results of the monthly surveys, it is essential here to indicate briefly<sup>6</sup> the differences that distinguish the two data sources. In fact, the methodology, the questions, the operational and control procedures and the sampling and weighting all vary between the survey and the census. The scope of the survey is also narrower since it excludes the Armed Forces, the Yukon, the Northwest Territories, Indian Reserves, the institutional population and families abroad. Also the periods of reference in the two sources differ slightly. Owing to these various differences, the data from the two are not directly comparable. Special tables containing the census data have been prepared which add up to more or less the same universe as that covered by the survey. It was therefore possible, in certain cases, to take the influence of methodological or other factors partially into account when calculating the corrective coefficients. In addition, this enabled the universes not covered by the survey to be considered separately when adjustments were being made.

**Corrective adjustments** — The participation rates for males of average age were adjusted using data for May from the Labour Force Survey.<sup>7</sup> The corrective coefficients are based on two operations: first, ratios were calculated of the survey rates to the census rates for all age groups in every province except Quebec, and then averaged in order to allow the methodological differences between the survey and the census to be taken into account when comparable universes are being considered. Secondly, the same ratios (survey rates/census rates) by age group were calculated for Quebec and then weighted by the average previously obtained. In this way, the corrective coefficient obtained enabled the participation rates to be raised without the effect of the methodological differences being **doubled**. These coefficients were then applied to the participation rates by age in Quebec. Chart B.2 depicts the impact of these adjustments on the curve representing participation rates by age for Quebec.

With regard to the census participation rates for workers aged 65 years and over as compared with those from the survey, it was impossible to apply an adjustment similar to the one used for Quebec because the comparison showed no consistent pattern either above or below the survey rates of all the provinces. Indeed, although most provinces showed higher rates than those in the survey for the old ages, some did register lower rates. The relatively higher rates can be partly explained by the mistakes made by respondents. It proved extremely difficult, when calculating a coefficient, to determine exactly how much to attribute to

<sup>6</sup> For a more detailed analysis of the differences between the two sources, *Ibid.*

<sup>7</sup> The period of reference of the 1971 Labour Force Survey was the week ending May 22 while the census period was the week ending May 29.

methodological differences and how much to respondents' mistakes. Some adjustments were made to the labour force participation curves when errors of responses were obvious.

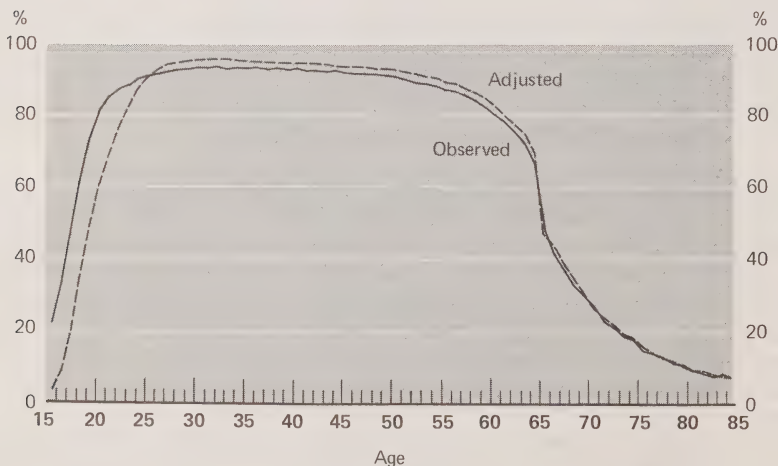
**Exclusion of students and smoothing** — In this category, the first adjustment consisted in excluding from the labour force students<sup>8</sup> who joined it only temporarily for the summer. In fact, it was necessary to estimate the proportion of students who would return to school in September as compared with those who had entered the labour force permanently. The Special Labour Force Surveys conducted in May and June 1971,<sup>9</sup> enabled this proportion to be calculated by gathering information on those who were studying full-time in the preceding March. This information concerned their activities during the week prior to the enumeration, the level of education attained, their plans for the following September and, if they had decided not to return to school, the reasons for this decision. The average of the figures for May and June made it possible to obtain a breakdown by age of the students in the labour force that corresponded more or

<sup>8</sup> The term "students", for the purposes of the labour force data, refers to those who belonged to the labour force during the week preceding the census and who had attended school full-time at some time since September 1970.

<sup>9</sup> Special surveys No. 251 and 252.

Chart B.1

### Labour Force Participation Rates by Age Canada, 1971 Census



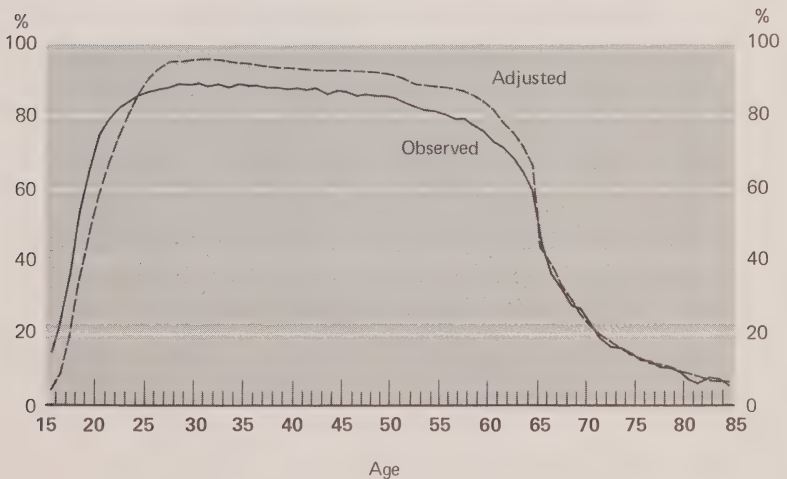
Source: 1971 Census

less to the breakdown based on the census. A return coefficient, calculated for the age group 15 - 24 for each province, was established by combining the percentage of those who indicated they would return to school with an equal percentage of those who were undecided. Since the 1971 special surveys only provided data for the 15 - 24 age group, it was necessary to apply certain adjustments in order to take into account the large number of students 25 years and over. Following the adjustments to the 15 - 24 age group, the labour force participation curve sloped steeply, reflecting a lack of continuity in the adjustments. In order to compensate for this problem, the rates for the ages 25 to 29 were smoothed by applying the moving average to same data. The same return coefficients were used in adjusting the census data for Indian Reserves owing to a similar lack of information for this group.

Finally, the labour force participation curves by age were smoothed with the help of the Sprague multipliers (see Charts 3.1 and 3.2). In order to maintain the normal break in the curves at 65 years, the rates for 15 - 64 and 65 - 84 age groups were treated separately when applying the multipliers.

Chart B.2

### Labour Force Participation Rates by Age Quebec, 1971 Census



Source: 1971 Census







## PART II

### DETAILED TABLES



## CURRENT WORKING LIFE TABLES

TABLE 1 A. Current Working Life Table for Males: Canada, 1971

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000 w_x$	$\overset{\circ}{e}_x$	$\overset{\circ}{e}w_x$	$\overset{\circ}{e}r_x$
15 years . . . . .	97,078	3,786	39	56.33	47.30	9.03
16 " . . . . .	96,965	9,115	94	55.39	46.35	9.04
17 " . . . . .	96,833	19,560	202	54.46	45.41	9.05
18 " . . . . .	96,687	33,840	350	53.53	44.47	9.06
19 " . . . . .	96,529	47,975	497	52.62	43.54	9.08
20 " . . . . .	96,361	58,395	606	51.71	42.61	9.10
21 " . . . . .	96,187	66,658	693	50.80	41.69	9.11
22 " . . . . .	96,008	73,446	765	49.89	40.76	9.13
23 " . . . . .	95,831	78,965	824	48.98	39.84	9.14
24 " . . . . .	95,659	83,223	870	48.07	38.91	9.16
25 " . . . . .	95,497	86,329	904	47.16	37.98	9.18
26 " . . . . .	95,344	88,575	929	46.23	37.04	9.19
27 " . . . . .	95,199	89,773	943	45.30	36.10	9.20
28 " . . . . .	95,057	89,924	946	44.37	35.15	9.22
29 " . . . . .	94,916	90,075	949	43.44	34.20	9.24
30 " . . . . .	94,773	90,034	950	42.50	33.25	9.25
31 " . . . . .	94,627	90,085	952	41.56	32.30	9.26
32 " . . . . .	94,477	89,942	952	40.63	31.35	9.28
33 " . . . . .	94,320	89,793	952	39.69	30.40	9.29
34 " . . . . .	94,156	89,542	951	38.76	29.47	9.29
35 " . . . . .	93,984	89,285	950	37.83	28.55	9.28
36 " . . . . .	93,802	89,018	949	36.90	27.63	9.27
37 " . . . . .	93,605	88,738	948	35.97	26.72	9.25
38 " . . . . .	93,392	88,442	947	35.05	25.80	9.25
39 " . . . . .	93,158	88,127	946	34.13	24.89	9.24
40 " . . . . .	92,900	87,790	945	33.22	23.98	9.24
41 " . . . . .	92,615	87,429	944	32.32	23.07	9.25
42 " . . . . .	92,302	86,948	942	31.42	22.18	9.24
43 " . . . . .	91,959	86,533	941	30.53	21.29	9.24
44 " . . . . .	91,585	85,998	939	29.65	20.41	9.24
45 " . . . . .	91,179	85,344	936	28.77	19.55	9.22
46 " . . . . .	90,735	84,746	934	27.90	18.69	9.21
47 " . . . . .	90,250	84,023	931	27.04	17.83	9.21
48 " . . . . .	89,716	83,256	928	26.19	16.98	9.21
49 " . . . . .	89,129	82,533	926	25.35	16.13	9.22

TABLE 1 A. Current Working Life Table for Males: Canada, 1971 - Concluded

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000 w_x$	${}^{\circ}e_x$	${}^{\circ}ew_x$	${}^{\circ}er_x$
50 years	88,483	81,493	921	24.52	15.30	9.22
51 "	87,774	80,313	915	23.71	14.50	9.21
52 "	86,999	78,995	908	22.91	13.72	9.19
53 "	86,154	77,711	902	22.11	12.94	9.17
54 "	85,238	76,544	898	21.34	12.14	9.20
55 "	84,247	75,148	892	20.57	11.33	9.24
56 "	83,178	73,613	885	19.82	10.55	9.27
57 "	82,022	71,605	873	19.08	9.79	9.29
58 "	80,772	69,302	858	18.35	9.07	9.28
59 "	79,420	66,792	841	17.64	8.38	9.26
60 "	77,964	64,008	821	16.95	7.69	9.26
61 "	76,399	60,814	796	16.27	7.04	9.23
62 "	74,722	57,237	766	15.61	6.41	9.20
63 "	72,930	53,968	740	14.96	5.77	9.19
64 "	71,025	48,936	689	14.33	5.19	9.14
65 "	69,007	32,433	470	13.72	5.36	8.36
66 "	66,878	28,089	420	13.12	6.14	6.98
67 "	64,636	24,303	376	12.54	6.02	6.52
68 "	62,283	20,927	336	11.98	5.90	6.08
69 "	59,828	17,948	300	11.43	5.78	5.65
70 "	57,276	15,178	265	10.90	5.70	5.20
71 "	54,634	13,003	238	10.38	5.63	4.75
72 "	51,906	11,056	213	9.88	5.51	4.37
73 "	49,102	9,378	191	9.39	5.41	3.98
74 "	46,235	7,952	172	8.92	5.29	3.63
75 "	43,321	6,585	152	8.47	5.21	3.26
76 "	40,372	5,571	138	8.02	5.15	2.87
77 "	37,400	4,638	124	7.60	5.04	2.56
78 "	34,420	3,855	112	7.19	4.97	2.22
79 "	31,453	3,208	102	6.79	4.88	1.91
80 "	28,522	2,653	93	6.41	4.79	1.62
81 "	25,648	2,180	85	6.05	4.71	1.34
82 "	22,851	1,805	79	5.70	4.62	1.08
83 "	20,155	1,451	72	5.36	4.55	0.81
84 "	17,583	1,178	67	5.04	4.53	0.51
85 " and over <sup>1</sup>	16,332	1,045	64	4.74	4.29	0.45

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^{\circ}e_x$ ,  ${}^{\circ}ew_x$  and  ${}^{\circ}er_x$  figures relate to exact age 85.

TABLE 1 B. Current Working Life Table for Males: Canada, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	54.90	1.16	1.16	—
16 " . . . . .	107.85	1.36	1.36	—
17 " . . . . .	147.78	1.51	1.51	—
18 " . . . . .	146.77	1.63	1.63	—
19 " . . . . .	108.82	1.74	1.74	—
20 " . . . . .	86.85	1.81	1.81	—
21 " . . . . .	71.87	1.86	1.86	—
22 " . . . . .	58.90	1.84	1.84	—
23 " . . . . .	45.92	1.79	1.79	—
24 " . . . . .	33.95	1.69	1.69	—
25 " . . . . .	24.98	1.60	1.60	—
26 " . . . . .	13.99	1.52	1.52	—
27 " . . . . .	3.00	1.49	1.49	—
28 " . . . . .	3.00	1.48	1.48	—
29 " . . . . .	2.00	1.51	1.51	—
30 " . . . . .	1.00	1.54	1.54	—
31 " . . . . .	—	1.59	1.59	—
32 " . . . . .	—	1.66	1.66	—
33 " . . . . .	—	2.79	1.74	1.05
34 " . . . . .	—	2.88	1.83	1.05
35-39 years . . . . .	—	3.37	2.32	1.05
40-44 " . . . . .	—	5.63	3.73	1.91
45-49 " . . . . .	—	9.19	5.98	3.21
50-54 " . . . . .	—	16.08	9.73	6.35
55-59 " . . . . .	—	31.55	15.25	16.30
60-64 " . . . . .	—	119.26	22.82	96.44
65-69 " . . . . .	—	140.86	34.62	106.24
70-74 " . . . . .	—	153.76	51.51	102.25
75-79 " . . . . .	—	166.25	76.57	89.67
80-84 " . . . . .	—	187.29	115.23	72.05

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 2 A. Current Working Life Table for Males: Newfoundland, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	96,504	3,764	39	56.69	44.56	12.13
16 " . . . . .	96,441	8,101	84	55.73	43.59	12.14
17 " . . . . .	96,372	18,889	196	54.76	42.62	12.14
18 " . . . . .	96,294	34,088	354	53.80	41.65	12.15
19 " . . . . .	96,202	46,369	482	52.85	40.69	12.16
20 " . . . . .	96,096	58,042	604	51.90	39.73	12.17
21 " . . . . .	95,974	65,742	685	50.97	38.78	12.19
22 " . . . . .	95,841	71,785	749	50.03	37.83	12.20
23 " . . . . .	95,705	76,373	798	49.10	36.88	12.22
24 " . . . . .	95,570	79,705	834	48.17	35.93	12.24
25 " . . . . .	95,442	81,126	850	47.24	34.98	12.26
26 " . . . . .	95,321	82,739	868	46.30	34.02	12.28
27 " . . . . .	95,204	83,589	878	45.36	33.07	12.29
28 " . . . . .	95,089	84,059	884	44.41	32.11	12.30
29 " . . . . .	94,971	84,049	885	43.47	31.14	12.33
30 " . . . . .	94,850	84,037	886	42.52	30.18	12.34
31 " . . . . .	94,724	84,020	887	41.57	29.22	12.35
32 " . . . . .	94,590	83,996	888	40.63	28.26	12.37
33 " . . . . .	94,446	83,868	888	39.69	27.30	12.39
34 " . . . . .	94,288	83,445	885	38.75	26.39	12.36
35 " . . . . .	94,114	82,726	879	37.82	25.57	12.25
36 " . . . . .	93,923	82,183	875	36.89	24.76	12.13
37 " . . . . .	93,716	81,627	871	35.97	23.92	12.05
38 " . . . . .	93,494	81,153	868	35.05	23.07	11.98
39 " . . . . .	93,262	80,578	864	34.13	22.22	11.91
40 " . . . . .	93,020	79,997	860	33.22	21.37	11.85
41 " . . . . .	92,764	79,313	855	32.31	20.54	11.77
42 " . . . . .	92,490	78,616	850	31.40	19.71	11.69
43 " . . . . .	92,190	77,993	846	30.49	18.87	11.62
44 " . . . . .	91,858	77,253	841	29.59	18.04	11.55
45 " . . . . .	91,489	76,393	835	28.71	17.22	11.49
46 " . . . . .	91,077	75,594	830	27.83	16.40	11.43
47 " . . . . .	90,617	74,578	823	26.96	15.59	11.37
48 " . . . . .	90,101	73,252	813	26.10	14.83	11.27
49 " . . . . .	89,522	71,886	803	25.25	14.10	11.15

TABLE 2 A. Current Working Life Table for Males:  
Newfoundland, 1971 - Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^{\circ}e_x$	${}^{\circ}ew_x$	${}^{\circ}er_x$
50 years . . . . .	88,873	70,387	792	24.42	13.37	11.05
51 " . . . . .	88,153	68,671	779	23.61	12.67	10.94
52 " . . . . .	87,361	67,006	767	22.81	11.97	10.84
53 " . . . . .	86,503	65,483	757	22.02	11.25	10.77
54 " . . . . .	85,585	63,932	747	21.24	10.50	10.74
55 " . . . . .	84,609	62,188	735	20.47	9.76	10.71
56 " . . . . .	83,568	60,253	721	19.71	9.04	10.67
57 " . . . . .	82,451	58,128	705	18.96	8.33	10.63
58 " . . . . .	81,244	55,815	687	18.22	7.63	10.59
59 " . . . . .	79,936	53,237	666	17.50	6.95	10.55
60 " . . . . .	78,519	50,409	642	16.79	6.29	10.50
61 " . . . . .	76,988	47,348	615	16.10	5.64	10.46
62 " . . . . .	75,332	44,069	585	15.42	4.99	10.43
63 " . . . . .	73,544	40,449	550	14.77	4.36	10.41
64 " . . . . .	71,616	36,596	511	14.13	3.73	10.40
65 " . . . . .	69,544	34,187	476	13.52	3.12	10.38
66 " . . . . .	67,336	31,198	446	12.93	2.54	10.36
67 " . . . . .	65,006	28,026	415	12.35	1.99	10.34
68 " . . . . .	62,576	24,826	385	11.80	1.46	10.32
69 " . . . . .	60,069	21,611	354	11.25	0.95	10.30
70 " . . . . .	57,500	18,395	322	10.72	0.46	10.28
71 " . . . . .	54,876	15,244	290	10.19	0.00	10.26
72 " . . . . .	52,197	12,159	257	9.67	-0.47	10.24
73 " . . . . .	49,469	9,095	224	9.16	-0.95	10.22
74 " . . . . .	46,710	6,157	191	8.65	-1.43	10.20
75 " . . . . .	43,933	3,339	158	8.15	-1.91	10.18
76 " . . . . .	41,128	2,632	125	7.65	-2.39	10.16
77 " . . . . .	38,278	2,067	92	7.16	-2.87	10.14
78 " . . . . .	35,371	1,592	59	6.68	-3.35	10.12
79 " . . . . .	32,418	1,232	46	6.22	-3.83	10.10
80 " . . . . .	29,438	1,001	34	5.77	-4.31	10.08
81 " . . . . .	26,441	846	25	5.33	-4.79	10.06
82 " . . . . .	23,441	727	18	4.91	-5.27	10.04
83 " . . . . .	20,463	593	13	4.51	-5.75	10.02
84 " . . . . .	17,553	491	9	4.14	-6.23	10.00
85 " and over <sup>1</sup> . .	16,122	419	6	3.78	-6.71	9.98

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^{\circ}e_x$ ,  ${}^{\circ}ew_x$  and  ${}^{\circ}er_x$  figures relate to exact age 85.

TABLE 2 B. Current Working Life Table for Males: Newfoundland, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	45.00	.65	.65	—
16 “ . . . . .	111.92	.72	.72	—
17 “ . . . . .	157.87	.81	.81	—
18 “ . . . . .	127.88	.96	.96	—
19 “ . . . . .	121.88	1.10	1.10	—
20 “ . . . . .	80.90	1.27	1.27	—
21 “ . . . . .	63.92	1.39	1.39	—
22 “ . . . . .	48.94	1.42	1.42	—
23 “ . . . . .	35.95	1.41	1.41	—
24 “ . . . . .	16.00	1.34	1.34	—
25 “ . . . . .	17.99	1.27	1.27	—
26 “ . . . . .	9.99	1.23	1.23	—
27 “ . . . . .	6.01	1.21	1.21	—
28 “ . . . . .	1.00	1.24	1.24	—
29 “ . . . . .	1.00	1.27	1.27	—
30 “ . . . . .	1.00	1.33	1.33	—
31 “ . . . . .	1.00	1.41	1.41	—
32 “ . . . . .	—	1.52	1.52	—
33 “ . . . . .	—	5.05	1.67	3.38
34 “ . . . . .	—	8.61	1.84	6.77
35-39 years . . . . .	—	6.68	2.33	4.36
40-44 “ . . . . .	—	9.17	3.30	5.87
45-49 “ . . . . .	—	16.23	5.75	10.48
50-54 “ . . . . .	—	24.46	9.71	14.75
55-59 “ . . . . .	—	41.09	14.62	26.47
60-64 “ . . . . .	—	183.94	21.75	162.19
65-69 “ . . . . .	—	99.41	36.10	63.31
70-74 “ . . . . .	—	168.10	49.23	118.88
75-79 “ . . . . .	—	214.00	71.50	142.48
80-84 “ . . . . .	—	167.66	126.96	40.69

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.

TABLE 3 A. Current Working Life Table for Males:  
Prince Edward Island, 1971

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	96,480	8,973	93	56.79	47.14	9.65
16 " . . . . .	96,416	21,886	227	55.83	46.18	9.65
17 " . . . . .	96,348	29,386	305	54.86	45.21	9.65
18 " . . . . .	96,270	41,011	426	53.91	44.24	9.67
19 " . . . . .	96,029	51,472	536	52.95	43.31	9.64
20 " . . . . .	95,772	56,505	590	52.17	42.43	9.74
21 " . . . . .	95,636	71,058	743	51.23	41.51	9.72
22 " . . . . .	95,504	77,072	807	50.32	40.57	9.75
23 " . . . . .	95,383	82,411	864	49.37	39.62	9.75
24 " . . . . .	95,128	85,520	899	48.44	38.70	9.74
25 " . . . . .	94,878	87,193	919	47.63	37.80	9.83
26 " . . . . .	94,758	88,220	931	46.69	36.87	9.82
27 " . . . . .	94,642	88,963	940	45.75	35.92	9.83
28 " . . . . .	94,527	89,044	942	44.80	34.96	9.84
29 " . . . . .	94,178	89,281	948	43.86	34.05	9.81
30 " . . . . .	93,825	89,228	951	43.13	33.22	9.91
31 " . . . . .	93,700	89,015	950	42.18	32.27	9.91
32 " . . . . .	93,568	88,328	944	41.24	31.43	9.81
33 " . . . . .	93,425	87,913	941	40.30	30.63	9.67
34 " . . . . .	93,140	87,552	940	39.36	29.76	9.60
35 " . . . . .	92,840	86,898	936	38.54	28.93	9.61
36 " . . . . .	92,652	86,444	933	37.61	28.11	9.50
37 " . . . . .	92,448	85,884	929	36.69	27.27	9.42
38 " . . . . .	92,230	85,221	924	35.77	26.46	9.31
39 " . . . . .	92,038	84,675	920	34.86	25.65	9.21
40 " . . . . .	91,836	84,122	916	33.92	24.81	9.11
41 " . . . . .	91,584	83,433	911	33.01	23.99	9.02
42 " . . . . .	91,314	82,822	907	32.10	23.18	8.92
43 " . . . . .	91,016	82,369	905	31.20	22.32	8.88
44 " . . . . .	90,680	81,975	904	30.30	21.44	8.86
45 " . . . . .	90,307	81,457	902	29.42	20.55	8.87
46 " . . . . .	89,900	81,000	901	28.55	19.67	8.88
47 " . . . . .	89,446	80,412	899	27.68	18.80	8.88
48 " . . . . .	88,936	79,865	898	26.83	17.93	8.90
49 " . . . . .	88,416	79,221	896	25.99	17.06	8.93

TABLE 3 A. Current Working Life Table for Males:  
Prince Edward Island, 1971 - Concluded

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	87,826	78,516	894	25.13	16.20	8.93
51 " . . . . .	87,114	77,531	890	24.32	15.37	8.95
52 " . . . . .	86,332	76,490	886	23.53	14.56	8.97
53 " . . . . .	85,484	75,568	884	22.75	13.75	9.00
54 " . . . . .	84,584	74,518	881	21.98	12.92	9.06
55 " . . . . .	83,624	73,171	875	21.21	12.12	9.09
56 " . . . . .	82,596	71,611	867	20.46	11.35	9.11
57 " . . . . .	81,492	69,757	856	19.72	10.61	9.11
58 " . . . . .	80,299	67,612	842	18.99	9.91	9.08
59 " . . . . .	78,905	65,018	824	18.28	9.24	9.04
60 " . . . . .	77,406	62,002	801	17.63	8.62	9.01
61 " . . . . .	75,896	58,744	774	16.95	8.05	8.90
62 " . . . . .	74,265	54,659	736	16.30	7.53	8.77
63 " . . . . .	72,502	50,969	703	15.66	7.05	8.61
64 " . . . . .	70,604	46,528	659	15.05	6.59	8.46
65 " . . . . .	68,566	37,506	547	14.46	6.54	7.92
66 " . . . . .	66,388	33,526	505	13.90	6.68	7.22
67 " . . . . .	64,092	28,841	450	13.36	6.54	6.82
68 " . . . . .	61,696	25,110	407	12.84	6.49	6.35
69 " . . . . .	59,796	22,005	368	12.34	6.36	5.98
70 " . . . . .	57,808	19,192	332	11.61	6.21	5.40
71 " . . . . .	55,170	16,551	300	11.12	6.08	5.04
72 " . . . . .	52,477	14,221	271	10.65	5.99	4.66
73 " . . . . .	49,734	12,185	245	10.19	5.90	4.29
74 " . . . . .	47,609	10,569	222	9.74	5.78	3.96
75 " . . . . .	45,424	9,130	201	9.04	5.60	3.44
76 " . . . . .	42,524	7,782	183	8.59	5.44	3.15
77 " . . . . .	39,577	6,609	167	8.17	5.32	2.85
78 " . . . . .	36,572	5,596	153	7.77	5.18	2.59
79 " . . . . .	34,008	4,795	141	7.40	5.01	2.39
80 " . . . . .	31,370	4,078	130	6.84	4.79	2.05
81 " . . . . .	28,176	3,381	120	6.51	4.60	1.91
82 " . . . . .	24,979	2,798	112	6.24	4.46	1.78
83 " . . . . .	21,806	2,290	105	6.02	4.32	1.70
84 " . . . . .	20,602	2,040	99	5.88	4.02	1.86
85 " and over <sup>1</sup> . .	18,832	1,563	83	5.31	3.70	1.61

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 3 B. Current Working Life Table for Males:  
Prince Edward Island, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	133.90	.66	.66	—
16 " . . . . .	77.95	.71	.71	—
17 " . . . . .	120.91	.81	.81	—
18 " . . . . .	109.73	2.50	2.50	—
19 " . . . . .	53.85	2.68	2.68	—
20 " . . . . .	152.80	1.42	1.42	—
21 " . . . . .	63.92	1.38	1.38	—
22 " . . . . .	56.94	1.27	1.27	—
23 " . . . . .	34.92	2.67	2.67	—
24 " . . . . .	19.96	2.63	2.63	—
25 " . . . . .	12.00	1.26	1.26	—
26 " . . . . .	8.99	1.22	1.22	—
27 " . . . . .	6.00	1.22	1.22	—
28 " . . . . .	3.00	3.69	3.69	—
29 " . . . . .	2.01	3.75	3.75	—
30 " . . . . .	—	2.38	1.33	1.05
31 " . . . . .	—	7.71	1.40	6.31
32 " . . . . .	—	4.70	1.53	3.18
33 " . . . . .	—	4.11	3.05	1.06
34 " . . . . .	—	7.46	3.21	4.25
35-39 years . . . . .	—	6.47	2.17	4.30
40-44 " . . . . .	—	6.42	3.35	3.07
45-49 " . . . . .	—	7.33	5.55	1.77
50-54 " . . . . .	—	14.00	9.74	4.27
55-59 " . . . . .	—	32.54	15.19	17.35
60-64 " . . . . .	—	94.13	23.04	71.09
65-69 " . . . . .	—	125.34	31.98	93.35
70-74 " . . . . .	—	138.06	44.87	93.19
75-79 " . . . . .	—	148.86	68.49	80.37
80-84 " . . . . .	—	153.56	90.59	62.97

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 4 A. Current Working Life Table for Males: Nova Scotia, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	97,099	2,719	28	55.60	45.77	9.83
16 " . . . . .	96,974	8,728	90	54.66	44.82	9.84
17 " . . . . .	96,827	19,269	199	53.74	43.88	9.86
18 " . . . . .	96,664	33,059	342	52.83	42.95	9.88
19 " . . . . .	96,487	48,243	500	51.92	42.02	9.90
20 " . . . . .	96,299	60,283	626	51.02	41.10	9.92
21 " . . . . .	96,102	68,425	712	50.12	40.18	9.94
22 " . . . . .	95,900	74,898	781	49.22	39.27	9.95
23 " . . . . .	95,695	79,905	835	48.32	38.35	9.97
24 " . . . . .	95,493	83,556	875	47.43	37.43	10.00
25 " . . . . .	95,297	85,577	898	46.53	36.51	10.02
26 " . . . . .	95,109	87,310	918	45.62	35.58	10.04
27 " . . . . .	94,926	88,186	929	44.71	34.65	10.06
28 " . . . . .	94,747	88,494	934	43.79	33.71	10.08
29 " . . . . .	94,571	88,518	936	42.87	32.78	10.09
30 " . . . . .	94,398	88,451	937	41.95	31.83	10.12
31 " . . . . .	94,227	88,479	939	41.02	30.89	10.13
32 " . . . . .	94,052	88,691	943	40.10	30.01	10.09
33 " . . . . .	93,871	88,426	942	39.17	29.02	10.15
34 " . . . . .	93,679	87,965	939	38.25	28.14	10.11
35 " . . . . .	93,473	87,678	938	37.33	27.25	10.08
36 " . . . . .	93,250	87,189	935	36.41	26.37	10.04
37 " . . . . .	93,009	86,870	934	35.50	25.49	10.01
38 " . . . . .	92,749	86,628	934	34.60	24.57	10.03
39 " . . . . .	92,470	86,274	933	33.70	23.66	10.04
40 " . . . . .	92,169	85,994	933	32.80	22.74	10.06
41 " . . . . .	91,845	85,691	933	31.91	21.82	10.09
42 " . . . . .	91,495	85,182	931	31.03	20.92	10.11
43 " . . . . .	91,114	84,372	926	30.15	20.08	10.07
44 " . . . . .	90,702	83,355	919	29.28	19.29	9.99
45 " . . . . .	90,255	82,313	912	28.41	18.52	9.89
46 " . . . . .	89,769	81,151	904	27.56	17.76	9.80
47 " . . . . .	89,240	80,048	897	26.71	17.01	9.70
48 " . . . . .	88,661	79,086	892	25.87	16.22	9.65
49 " . . . . .	88,027	78,168	888	25.05	15.41	9.64

TABLE 4 A. Current Working Life Table for Males:  
Nova Scotia, 1971 — Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	87,332	77,114	883	24.23	14.60	9.63
51 " . . . . .	86,575	75,926	877	23.43	13.81	9.62
52 " . . . . .	85,751	74,518	869	22.64	13.03	9.61
53 " . . . . .	84,860	72,980	860	21.86	12.28	9.58
54 " . . . . .	83,902	71,233	849	21.10	11.55	9.55
55 " . . . . .	82,876	69,367	837	20.34	10.84	9.50
56 " . . . . .	81,777	67,302	823	19.60	10.13	9.47
57 " . . . . .	80,595	64,960	806	18.87	9.45	9.42
58 " . . . . .	79,320	62,504	788	18.15	8.79	9.36
59 " . . . . .	77,943	59,782	767	17.44	8.14	9.30
60 " . . . . .	76,458	56,885	744	16.76	7.51	9.25
61 " . . . . .	74,863	53,826	719	16.09	6.88	9.21
62 " . . . . .	73,154	50,476	690	15.44	6.27	9.17
63 " . . . . .	71,330	47,006	659	14.80	5.68	9.12
64 " . . . . .	69,392	43,301	624	14.18	5.09	9.09
65 " . . . . .	67,343	32,257	479	13.58	4.93	8.65
66 " . . . . .	65,184	25,617	393	13.00	5.32	7.68
67 " . . . . .	62,917	20,133	320	12.43	5.62	6.81
68 " . . . . .	60,547	17,438	288	11.88	5.77	6.11
69 " . . . . .	58,083	14,695	253	11.34	5.66	5.68
70 " . . . . .	55,535	12,273	221	10.82	5.65	5.17
71 " . . . . .	52,907	10,211	193	10.31	5.68	4.63
72 " . . . . .	50,201	8,584	171	9.82	5.71	4.11
73 " . . . . .	47,423	7,398	156	9.34	5.65	3.69
74 " . . . . .	44,583	6,242	140	8.88	5.53	3.35
75 " . . . . .	41,694	5,253	126	8.44	5.48	2.96
76 " . . . . .	38,774	4,537	117	8.02	5.36	2.66
77 " . . . . .	35,837	3,835	107	7.61	5.18	2.43
78 " . . . . .	32,903	3,159	96	7.21	5.10	2.11
79 " . . . . .	29,996	2,670	89	6.84	5.04	1.80
80 " . . . . .	27,138	2,062	76	6.48	5.08	1.40
81 " . . . . .	24,352	1,680	69	6.14	5.32	0.82
82 " . . . . .	21,661	1,451	67	5.81	5.29	0.52
83 " . . . . .	19,087	1,279	67	5.50	5.00	0.50
84 " . . . . .	16,650	1,082	65	5.20	4.70	0.50
85 " and over <sup>1</sup> . .	15,469	913	59	4.92	4.48	0.44

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 4 B. Current Working Life Table for Males: Nova Scotia, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	61.90	1.29	1.29	—
16 “ . . . . .	108.84	1.52	1.52	—
17 “ . . . . .	142.76	1.68	1.68	—
18 “ . . . . .	157.71	1.83	1.83	—
19 “ . . . . .	125.76	1.95	1.95	—
20 “ . . . . .	85.84	2.05	2.05	—
21 “ . . . . .	68.86	2.10	2.10	—
22 “ . . . . .	53.89	2.14	2.14	—
23 “ . . . . .	39.92	2.11	2.11	—
24 “ . . . . .	22.97	2.05	2.05	—
25 “ . . . . .	19.97	1.97	1.97	—
26 “ . . . . .	10.99	1.92	1.92	—
27 “ . . . . .	5.01	1.89	1.89	—
28 “ . . . . .	4.01	1.86	1.86	—
29 “ . . . . .	2.00	1.83	1.83	—
30 “ . . . . .	2.00	1.81	1.81	—
31 “ . . . . .	1.01	1.86	1.86	—
32 “ . . . . .	—	2.98	1.92	1.06
33 “ . . . . .	—	5.22	2.04	3.18
34 “ . . . . .	—	3.26	2.20	1.06
35-39 years . . . . .	—	3.87	2.81	1.07
40-44 “ . . . . .	—	8.71	4.18	4.53
45-49 “ . . . . .	—	12.96	6.54	6.42
50-54 “ . . . . .	—	20.94	10.36	10.58
55-59 “ . . . . .	—	38.88	15.80	23.08
60-64 “ . . . . .	—	103.72	23.97	79.75
65-69 “ . . . . .	—	175.18	35.22	139.96
70-74 “ . . . . .	—	156.03	52.85	103.18
75-79 “ . . . . .	—	169.94	78.41	91.54
80-84 “ . . . . .	—	162.08	117.74	44.34

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.

TABLE 5 A. Current Working Life Table for Males: New Brunswick, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000w_x$	$\overset{\circ}{e}_x$	$\overset{\circ}{e}w_x$	$\overset{\circ}{e}r_x$
15 years . . . . .	96,927	4,265	44	56.14	46.35	9.79
16 " . . . . .	96,792	12,002	124	55.21	45.41	9.80
17 " . . . . .	96,636	20,487	212	54.29	44.48	9.81
18 " . . . . .	96,462	31,350	325	53.38	43.55	9.83
19 " . . . . .	96,271	45,729	475	52.48	42.63	9.85
20 " . . . . .	96,065	58,504	609	51.59	41.72	9.87
21 " . . . . .	95,847	66,326	692	50.71	40.81	9.90
22 " . . . . .	95,623	72,673	760	49.82	39.91	9.91
23 " . . . . .	95,402	77,657	814	48.94	39.00	9.94
24 " . . . . .	95,193	81,390	855	48.05	38.08	9.97
25 " . . . . .	95,003	84,268	887	47.15	37.16	9.99
26 " . . . . .	94,832	86,202	909	46.24	36.23	10.01
27 " . . . . .	94,677	86,629	915	45.32	35.29	10.03
28 " . . . . .	94,533	86,592	916	44.39	34.35	10.04
29 " . . . . .	94,397	86,468	916	43.45	33.40	10.05
30 " . . . . .	94,267	86,537	918	42.51	32.45	10.06
31 " . . . . .	94,140	86,797	922	41.57	31.49	10.08
32 " . . . . .	94,010	86,771	923	40.62	30.55	10.07
33 " . . . . .	93,872	86,644	923	39.68	29.58	10.10
34 " . . . . .	93,722	86,412	922	38.74	28.64	10.10
35 " . . . . .	93,554	86,257	922	37.80	27.70	10.10
36 " . . . . .	93,366	85,990	921	36.88	26.76	10.12
37 " . . . . .	93,155	85,703	920	35.95	25.85	10.10
38 " . . . . .	92,920	85,208	917	35.04	24.96	10.08
39 " . . . . .	92,659	84,690	914	34.13	24.11	10.02
40 " . . . . .	92,370	84,149	911	33.23	23.26	9.97
41 " . . . . .	92,052	83,491	907	32.34	22.42	9.92
42 " . . . . .	91,701	82,898	904	31.45	21.59	9.86
43 " . . . . .	91,317	82,368	902	30.58	20.73	9.85
44 " . . . . .	90,898	81,808	900	29.71	19.86	9.85
45 " . . . . .	90,444	81,219	898	28.85	19.00	9.85
46 " . . . . .	89,951	80,596	896	28.00	18.14	9.86
47 " . . . . .	89,416	79,759	892	27.16	17.30	9.86
48 " . . . . .	88,835	78,797	887	26.32	16.49	9.83
49 " . . . . .	88,203	77,530	879	25.50	15.72	9.78

TABLE 5 A. Current Working Life Table for Males:  
New Brunswick, 1971 - Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years	87,518	76,228	871	24.69	14.97	9.72
51 "	86,778	74,716	861	23.88	14.24	9.64
52 "	85,983	73,429	854	23.09	13.50	9.59
53 "	85,136	72,366	850	22.31	12.71	9.60
54 "	84,243	71,354	847	21.53	11.89	9.64
55 "	83,307	70,144	842	20.76	11.06	9.70
56 "	82,320	68,655	834	20.00	10.27	9.73
57 "	81,264	66,962	824	19.24	9.50	9.74
58 "	80,121	64,978	811	18.49	8.75	9.74
59 "	78,873	62,625	794	17.76	8.03	9.73
60 "	77,510	59,993	774	17.05	7.33	9.72
61 "	76,023	56,865	748	16.36	6.66	9.70
62 "	74,410	53,352	717	15.68	6.03	9.65
63 "	72,668	49,487	681	15.03	5.43	9.60
64 "	70,795	45,167	638	14.40	4.85	9.55
65 "	68,792	27,792	404	13.78	5.06	8.72
66 "	66,663	24,199	363	13.19	6.03	7.16
67 "	64,416	20,935	325	12.61	5.87	6.74
68 "	62,059	18,059	291	12.05	5.72	6.33
69 "	59,607	15,498	260	11.51	5.58	5.93
70 "	57,070	13,240	232	10.98	5.43	5.55
71 "	54,457	11,273	207	10.46	5.29	5.17
72 "	51,776	9,527	184	9.96	5.15	4.81
73 "	49,041	8,043	164	9.47	5.01	4.46
74 "	46,273	6,756	146	8.99	4.86	4.13
75 "	43,485	5,653	130	8.51	4.71	3.80
76 "	40,680	4,678	115	8.05	4.56	3.49
77 "	37,854	3,861	102	7.59	4.42	3.17
78 "	35,005	3,150	90	7.14	4.28	2.86
79 "	32,149	2,572	80	6.70	4.15	2.55
80 "	29,300	2,080	71	6.28	4.00	2.28
81 "	26,471	1,668	63	5.87	3.85	2.02
82 "	23,674	1,302	55	5.47	3.74	1.73
83 "	20,926	1,004	48	5.09	3.68	1.41
84 "	18,257	749	41	4.73	3.70	1.03
85 " and over <sup>1</sup>	16,946	688	37	4.39	3.63	0.76

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 5 B. Current Working Life Table for Males: New Brunswick, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	79.90	1.39	1.39	—
16 " . . . . .	87.86	1.61	1.61	—
17 " . . . . .	112.80	1.80	1.80	—
18 " . . . . .	149.71	1.98	1.98	—
19 " . . . . .	133.72	2.14	2.14	—
20 " . . . . .	82.81	2.27	2.27	—
21 " . . . . .	67.85	2.34	2.34	—
22 " . . . . .	53.89	2.31	2.31	—
23 " . . . . .	40.92	2.19	2.19	—
24 " . . . . .	31.95	2.00	2.00	—
25 " . . . . .	21.96	1.80	1.80	—
26 " . . . . .	6.00	1.63	1.63	—
27 " . . . . .	4.01	1.52	1.52	—
28 " . . . . .	2.00	1.44	1.44	—
29 " . . . . .	1.01	1.38	1.38	—
30 " . . . . .	1.01	1.35	1.35	—
31 " . . . . .	0.02	1.38	1.38	—
32 " . . . . .	—	1.47	1.47	—
33 " . . . . .	—	2.68	1.60	1.08
34 " . . . . .	—	1.79	1.79	—
35-39 years . . . . .	—	4.93	2.54	2.39
40-44 " . . . . .	—	7.06	4.20	2.86
45-49 " . . . . .	—	12.60	6.53	6.06
50-54 " . . . . .	—	16.50	9.78	6.71
55-59 " . . . . .	—	30.75	14.20	16.56
60-64 " . . . . .	—	131.67	22.13	109.54
65-69 " . . . . .	—	137.81	34.77	103.04
70-74 " . . . . .	—	156.50	50.09	106.41
75-79 " . . . . .	—	181.19	71.74	109.45
80-84 " . . . . .	—	216.77	111.79	104.98

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 6 A. Current Working Life Table for Males: Quebec, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	96,887	4,069	42	55.36	46.40	8.96
16 " . . . . .	96,774	8,613	89	54.42	45.45	8.97
17 " . . . . .	96,642	18,845	195	53.49	44.50	8.99
18 " . . . . .	96,495	33,870	351	52.57	43.57	9.00
19 " . . . . .	96,334	46,240	480	51.65	42.64	9.01
20 " . . . . .	96,160	55,869	581	50.74	41.71	9.03
21 " . . . . .	95,976	64,208	669	49.83	40.79	9.04
22 " . . . . .	95,786	71,169	743	48.93	39.87	9.06
23 " . . . . .	95,596	77,050	806	48.03	38.94	9.09
24 " . . . . .	95,413	81,864	858	47.12	38.02	9.10
25 " . . . . .	95,240	85,811	901	46.21	37.09	9.12
26 " . . . . .	95,079	88,328	929	45.29	36.15	9.14
27 " . . . . .	94,927	89,516	943	44.36	35.21	9.15
28 " . . . . .	94,779	89,850	948	43.43	34.27	9.16
29 " . . . . .	94,631	89,899	950	42.50	33.32	9.18
30 " . . . . .	94,480	89,850	951	41.56	32.39	9.17
31 " . . . . .	94,325	89,703	951	40.63	31.42	9.21
32 " . . . . .	94,165	89,457	950	39.70	30.49	9.21
33 " . . . . .	94,000	89,206	949	38.76	29.57	9.19
34 " . . . . .	93,827	88,760	946	37.83	28.69	9.14
35 " . . . . .	93,648	88,310	943	36.90	27.83	9.07
36 " . . . . .	93,458	87,851	940	35.97	26.97	9.00
37 " . . . . .	93,255	87,473	938	35.05	26.10	8.95
38 " . . . . .	93,036	87,082	936	34.13	25.21	8.92
39 " . . . . .	92,795	86,671	934	33.21	24.32	8.89
40 " . . . . .	92,531	86,239	932	32.30	23.44	8.86
41 " . . . . .	92,240	85,691	929	31.39	22.57	8.82
42 " . . . . .	91,919	85,117	926	30.50	21.72	8.78
43 " . . . . .	91,566	84,699	925	29.61	20.84	8.77
44 " . . . . .	91,179	84,341	925	28.72	19.93	8.79
45 " . . . . .	90,756	83,949	925	27.85	19.02	8.83
46 " . . . . .	90,292	83,430	924	26.98	18.12	8.86
47 " . . . . .	89,781	82,868	923	26.12	17.24	8.88
48 " . . . . .	89,216	82,168	921	25.28	16.36	8.92
49 " . . . . .	88,592	81,327	918	24.44	15.51	8.93

TABLE 6 A. Current Working Life Table for Males:  
Quebec, 1971 — Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 popula- tion	Average number of years remaining to persons in the labour force at exact age $x$		
	In the popula- tion	In the labour force		Years of life	Years of labour force activity	Years of retire- ment
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	87,903	80,080	911	23.62	14.70	8.92
51 " . . . . .	87,144	78,691	903	22.81	13.94	8.87
52 " . . . . .	86,308	77,073	893	22.02	13.20	8.82
53 " . . . . .	85,389	75,655	886	21.24	12.45	8.79
54 " . . . . .	84,384	74,511	883	20.47	11.66	8.81
55 " . . . . .	83,287	73,376	881	19.72	10.83	8.89
56 " . . . . .	82,095	72,079	878	18.99	10.00	8.99
57 " . . . . .	80,803	70,218	869	18.27	9.21	9.06
58 " . . . . .	79,410	67,737	853	17.57	8.43	9.09
59 " . . . . .	77,913	65,291	838	16.88	7.78	9.10
60 " . . . . .	76,314	62,425	818	16.21	7.08	9.13
61 " . . . . .	74,609	58,941	790	15.55	6.42	9.13
62 " . . . . .	72,794	54,887	754	14.91	5.81	9.10
63 " . . . . .	70,868	50,387	711	14.29	5.24	9.05
64 " . . . . .	68,831	45,360	659	13.68	4.71	8.97
65 " . . . . .	66,685	29,008	435	13.08	4.84	8.24
66 " . . . . .	64,432	24,355	378	12.51	5.66	6.85
67 " . . . . .	62,074	20,422	329	11.94	5.66	6.28
68 " . . . . .	59,615	17,110	287	11.40	5.66	5.74
69 " . . . . .	57,066	14,267	250	10.86	5.68	5.18
70 " . . . . .	54,437	11,976	220	10.35	5.70	4.65
71 " . . . . .	51,732	10,036	194	9.84	5.71	4.13
72 " . . . . .	48,955	8,469	173	9.35	5.71	3.64
73 " . . . . .	46,111	7,147	155	8.87	5.68	3.19
74 " . . . . .	43,215	6,093	141	8.41	5.62	2.79
75 " . . . . .	40,281	5,196	129	7.96	5.51	2.45
76 " . . . . .	37,323	4,479	120	7.53	5.36	2.17
77 " . . . . .	34,352	3,813	111	7.11	5.17	1.94
78 " . . . . .	31,386	3,264	104	6.71	4.98	1.73
79 " . . . . .	28,448	2,759	97	6.33	4.77	1.56
80 " . . . . .	25,561	2,275	89	5.96	4.61	1.35
81 " . . . . .	22,750	1,843	81	5.60	4.54	1.06
82 " . . . . .	20,036	1,423	71	5.26	4.59	0.67
83 " . . . . .	17,443	1,204	69	4.94	4.63	0.31
84 " . . . . .	14,997	1,005	67	4.63	4.41	0.22
85 " and over <sup>1</sup> . .	13,813	870	63	4.34	4.13	0.21

<sup>1</sup>The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 6 B. Current Working Life Table for Males: Quebec, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	46.90	1.17	1.17	—
16 “ . . . . .	105.85	1.36	1.36	—
17 “ . . . . .	155.77	1.52	1.52	—
18 “ . . . . .	128.78	1.67	1.67	—
19 “ . . . . .	100.83	1.81	1.81	—
20 “ . . . . .	87.84	1.91	1.91	—
21 “ . . . . .	73.86	1.98	1.98	—
22 “ . . . . .	62.88	1.98	1.98	—
23 “ . . . . .	51.91	1.91	1.91	—
24 “ . . . . .	42.93	1.81	1.81	—
25 “ . . . . .	27.96	1.69	1.69	—
26 “ . . . . .	13.99	1.60	1.60	—
27 “ . . . . .	5.00	1.56	1.56	—
28 “ . . . . .	2.01	1.56	1.56	—
29 “ . . . . .	1.01	1.60	1.60	—
30 “ . . . . .	—	1.64	1.64	—
31 “ . . . . .	—	2.75	1.70	1.05
32 “ . . . . .	—	2.80	1.75	1.05
33 “ . . . . .	—	5.00	1.84	3.16
34 “ . . . . .	—	5.07	1.90	3.17
35-39 years . . . . .	—	4.73	2.40	2.34
40-44 “ . . . . .	—	5.37	3.86	1.50
45-49 “ . . . . .	—	9.39	6.36	3.03
50-54 “ . . . . .	—	17.33	10.70	6.64
55-59 “ . . . . .	—	31.77	17.20	14.57
60-64 “ . . . . .	—	133.37	25.02	108.34
65-69 “ . . . . .	—	162.16	37.29	124.87
70-74 “ . . . . .	—	153.78	55.60	98.17
75-79 “ . . . . .	—	152.18	83.92	68.26
80-84 “ . . . . .	—	180.45	127.14	53.32

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.

TABLE 7 A. Current Working Life Table for Males: Ontario, 1971

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000 w_x$	${}_0e_x$	${}_0ew_x$	${}_0er_x$
15 years . . . . .	97,438	3,118	32	56.29	47.99	8.30
16 " . . . . .	97,337	9,052	93	55.35	47.03	8.32
17 " . . . . .	97,220	18,277	188	54.41	46.08	8.33
18 " . . . . .	97,091	30,972	319	53.48	45.14	8.34
19 " . . . . .	96,953	45,083	465	52.55	44.20	8.35
20 " . . . . .	96,810	58,860	608	51.63	43.27	8.36
21 " . . . . .	96,664	67,375	697	50.70	42.33	8.37
22 " . . . . .	96,516	74,317	770	49.78	41.39	8.39
23 " . . . . .	96,370	79,987	830	48.85	40.46	8.39
24 " . . . . .	96,228	84,296	876	47.93	39.52	8.41
25 " . . . . .	96,094	87,542	911	47.00	38.57	8.43
26 " . . . . .	95,967	89,729	935	46.06	37.62	8.44
27 " . . . . .	95,845	90,765	947	45.12	36.67	8.45
28 " . . . . .	95,726	91,131	952	44.17	35.72	8.45
29 " . . . . .	95,608	91,306	955	43.23	34.76	8.47
30 " . . . . .	95,488	91,478	958	42.28	33.80	8.48
31 " . . . . .	95,365	91,550	960	41.33	32.85	8.48
32 " . . . . .	95,237	91,523	961	40.39	31.89	8.50
33 " . . . . .	95,103	91,489	962	39.44	30.93	8.51
34 " . . . . .	94,960	91,352	962	38.50	29.98	8.52
35 " . . . . .	94,807	91,204	962	37.56	29.02	8.54
36 " . . . . .	94,642	90,951	961	36.62	28.08	8.54
37 " . . . . .	94,461	90,777	961	35.68	27.15	8.53
38 " . . . . .	94,263	90,492	960	34.75	26.22	8.53
39 " . . . . .	94,043	90,281	960	33.83	25.29	8.54
40 " . . . . .	93,799	90,047	960	32.91	24.35	8.56
41 " . . . . .	93,529	89,788	960	32.00	23.41	8.59
42 " . . . . .	93,230	89,408	959	31.10	22.50	8.60
43 " . . . . .	92,901	88,906	957	30.20	21.60	8.60
44 " . . . . .	92,540	88,376	955	29.31	20.73	8.58
45 " . . . . .	92,146	87,815	953	28.43	19.85	8.58
46 " . . . . .	91,715	87,129	950	27.55	18.99	8.56
47 " . . . . .	91,239	86,403	947	26.69	18.14	8.55
48 " . . . . .	90,712	85,723	945	25.83	17.28	8.55
49 " . . . . .	90,128	84,991	943	24.99	16.42	8.57

TABLE 7 A. Current Working Life Table for Males:  
Ontario, 1971 - Concluded

Age	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age x		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
x	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	89,479	84,110	940	24.15	15.57	8.58
51 " . . . . .	88,763	83,171	937	23.33	14.74	8.59
52 " . . . . .	87,975	81,993	932	22.53	13.92	8.61
53 " . . . . .	87,112	80,840	928	21.74	13.11	8.63
54 " . . . . .	86,175	79,540	923	20.96	12.30	8.66
55 " . . . . .	85,162	78,008	916	20.19	11.52	8.67
56 " . . . . .	84,065	76,331	908	19.43	10.74	8.69
57 " . . . . .	82,876	74,257	896	18.69	10.00	8.69
58 " . . . . .	81,584	72,039	883	17.97	9.28	8.69
59 " . . . . .	80,180	69,436	866	17.26	8.57	8.69
60 " . . . . .	78,658	66,623	847	16.57	7.89	8.68
61 " . . . . .	77,016	63,461	824	15.39	7.23	8.16
62 " . . . . .	75,251	59,975	797	15.24	6.59	8.65
63 " . . . . .	73,365	56,198	766	14.60	5.97	8.63
64 " . . . . .	71,362	52,166	731	13.98	5.37	8.61
65 " . . . . .	69,245	35,107	507	13.37	5.47	7.90
66 " . . . . .	67,015	30,626	457	12.78	6.19	6.59
67 " . . . . .	64,671	26,580	411	12.21	6.04	6.17
68 " . . . . .	62,214	22,957	369	11.65	5.91	5.74
69 " . . . . .	59,650	19,804	332	11.11	5.77	5.34
70 " . . . . .	56,986	16,640	292	10.59	5.68	4.91
71 " . . . . .	54,231	14,263	263	10.08	5.62	4.46
72 " . . . . .	51,392	12,283	239	9.59	5.47	4.12
73 " . . . . .	48,481	10,472	216	9.11	5.31	3.80
74 " . . . . .	45,519	8,967	197	8.65	5.13	3.52
75 " . . . . .	42,520	7,313	172	8.20	5.03	3.17
76 " . . . . .	39,500	6,123	155	7.77	5.00	2.77
77 " . . . . .	36,469	5,106	140	7.35	4.90	2.45
78 " . . . . .	33,440	4,247	127	6.94	4.79	2.15
79 " . . . . .	30,437	3,500	115	6.55	4.68	1.87
80 " . . . . .	27,481	2,913	106	6.17	4.56	1.61
81 " . . . . .	24,594	2,386	97	5.81	4.42	1.39
82 " . . . . .	21,796	1,940	89	5.46	4.32	1.14
83 " . . . . .	19,109	1,586	83	5.13	4.19	0.94
84 " . . . . .	16,556	1,275	77	4.82	4.06	0.76
85 " and over <sup>1</sup> . .	15,317	1,087	71	4.51	3.84	0.67

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 7B. Current Working Life Table for Males: Ontario, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years	60.90	1.04	1.04	—
16 "	94.89	1.20	1.20	—
17 "	130.83	1.33	1.33	—
18 "	145.80	1.42	1.42	—
19 "	142.79	1.47	1.47	—
20 "	88.88	1.51	1.51	—
21 "	72.89	1.53	1.53	—
22 "	59.92	1.51	1.51	—
23 "	45.95	1.47	1.47	—
24 "	34.96	1.39	1.39	—
25 "	23.97	1.32	1.32	—
26 "	12.00	1.27	1.27	—
27 "	5.01	1.24	1.24	—
28 "	3.01	1.23	1.23	—
29 "	3.01	1.26	1.26	—
30 "	2.00	1.29	1.29	—
31 "	1.02	1.34	1.34	—
32 "	1.01	1.41	1.41	—
33 "	—	1.50	1.50	—
34 "	—	1.61	1.61	—
35-39 years	—	2.55	2.13	0.42
40-44 "	—	5.01	3.55	1.46
45-49 "	—	8.58	5.85	2.74
50-54 "	—	14.95	9.81	5.13
55-59 "	—	31.04	15.64	15.40
60-64 "	—	112.82	23.92	88.91
65-69 "	—	138.63	36.24	102.39
70-74 "	—	151.45	54.07	97.37
75-79 "	—	168.14	79.89	88.25
80-84 "	—	191.50	120.65	70.85

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 8 A. Current Working Life Table for Males: Manitoba, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	96,876	4,166	43	57.30	48.19	9.11
16 " . . . . .	96,766	7,645	79	56.36	47.24	9.12
17 " . . . . .	96,642	20,681	214	55.43	46.30	9.13
18 " . . . . .	96,506	36,286	376	54.51	45.36	9.15
19 " . . . . .	96,360	51,745	537	53.59	44.43	9.16
20 " . . . . .	96,205	59,358	617	52.67	43.50	9.17
21 " . . . . .	96,044	67,327	701	51.75	42.57	9.18
22 " . . . . .	95,878	73,826	770	50.84	41.64	9.20
23 " . . . . .	95,711	78,962	825	49.93	40.71	9.22
24 " . . . . .	95,548	82,936	868	49.02	39.78	9.24
25 " . . . . .	95,391	85,375	895	48.10	38.84	9.26
26 " . . . . .	95,240	87,716	921	47.17	37.91	9.26
27 " . . . . .	95,095	88,724	933	46.25	36.96	9.29
28 " . . . . .	94,952	89,065	938	45.32	36.02	9.30
29 " . . . . .	94,810	89,406	943	44.38	35.07	9.31
30 " . . . . .	94,667	89,366	944	43.45	34.13	9.32
31 " . . . . .	94,523	89,324	945	42.51	33.18	9.33
32 " . . . . .	94,375	89,279	946	41.58	32.23	9.35
33 " . . . . .	94,221	89,133	946	40.64	31.28	9.36
34 " . . . . .	94,059	89,074	947	39.71	30.33	9.38
35 " . . . . .	93,886	88,910	947	38.78	29.38	9.40
36 " . . . . .	93,701	88,641	946	37.85	28.45	9.40
37 " . . . . .	93,503	88,360	945	36.93	27.54	9.39
38 " . . . . .	93,289	88,065	944	36.01	26.63	9.38
39 " . . . . .	93,058	87,661	942	35.09	25.73	9.36
40 " . . . . .	92,809	87,333	941	34.18	24.84	9.34
41 " . . . . .	92,539	86,894	939	33.28	23.94	9.34
42 " . . . . .	92,246	86,527	938	32.38	23.05	9.33
43 " . . . . .	91,928	86,228	938	31.48	22.14	9.34
44 " . . . . .	91,584	85,906	938	30.60	21.22	9.38
45 " . . . . .	91,210	85,555	938	29.71	20.30	9.41
46 " . . . . .	90,805	85,175	938	28.84	19.38	9.46
47 " . . . . .	90,363	84,670	937	27.97	18.48	9.49
48 " . . . . .	89,876	83,944	934	27.11	17.61	9.50
49 " . . . . .	89,340	83,086	930	26.26	16.77	9.49

**TABLE 8 A. Current Working Life Table for Males:  
Manitoba, 1971 - Concluded**

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 popula- tion	Average number of years remaining to persons in the labour force at exact age $x$		
	In the popula- tion	In the labour force		Years of life	Years of labour force activity	Years of retire- ment
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^{\circ}e_x$	${}^{\circ}ew_x$	${}^{\circ}er_x$
50 years . . . . .	88,751	82,183	926	25.42	15.95	9.47
51 " . . . . .	88,103	81,055	920	24.60	15.14	9.46
52 " . . . . .	87,395	79,966	915	23.78	14.34	9.44
53 " . . . . .	86,624	78,828	910	22.98	13.54	9.44
54 " . . . . .	85,790	77,726	906	22.19	12.72	9.47
55 " . . . . .	84,891	76,402	900	21.41	11.91	9.50
56 " . . . . .	83,922	74,858	892	20.64	11.13	9.51
57 " . . . . .	82,877	73,098	882	19.89	10.37	9.52
58 " . . . . .	81,749	71,040	869	19.14	9.63	9.51
59 " . . . . .	80,534	68,776	854	18.41	8.91	9.50
60 " . . . . .	79,228	66,314	837	17.69	8.20	9.49
61 " . . . . .	77,827	63,507	816	16.99	7.51	9.48
62 " . . . . .	76,323	60,371	791	16.30	6.85	9.45
63 " . . . . .	74,712	57,005	763	15.62	6.20	9.42
64 " . . . . .	72,994	53,286	730	14.96	5.56	9.40
65 " . . . . .	71,166	35,654	501	14.32	5.70	8.62
66 " . . . . .	69,225	31,567	456	13.69	6.48	7.21
67 " . . . . .	67,164	27,806	414	13.08	6.27	6.81
68 " . . . . .	64,976	24,301	374	12.48	6.08	6.40
69 " . . . . .	62,659	21,116	337	11.90	5.91	5.99
70 " . . . . .	60,217	18,246	303	11.35	5.74	5.61
71 " . . . . .	57,654	15,682	272	10.81	5.59	5.22
72 " . . . . .	54,980	13,360	243	10.29	5.45	4.84
73 " . . . . .	52,207	11,277	216	9.78	5.34	4.44
74 " . . . . .	49,356	9,476	192	9.30	5.25	4.05
75 " . . . . .	46,441	7,895	170	8.83	5.18	3.65
76 " . . . . .	43,477	6,565	151	8.37	5.13	3.24
77 " . . . . .	40,475	5,424	134	7.93	5.09	2.84
78 " . . . . .	37,448	4,456	119	7.51	5.08	2.43
79 " . . . . .	34,417	3,683	107	7.10	5.07	2.03
80 " . . . . .	31,406	3,015	96	6.71	5.06	1.65
81 " . . . . .	28,435	2,502	88	6.33	5.05	1.28
82 " . . . . .	25,524	2,093	82	5.97	4.97	1.00
83 " . . . . .	22,696	1,748	77	5.62	4.86	0.76
84 " . . . . .	19,974	1,498	75	5.29	4.67	0.62
85 " and over <sup>1</sup> . .	18,644	1,305	70	4.97	4.35	0.62

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^{\circ}e_x$ ,  ${}^{\circ}ew_x$  and  ${}^{\circ}er_x$  figures relate to exact age 85.

TABLE 8B. Current Working Life Table for Males: Manitoba, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	36.00	1.14	1.14	—
16 “ . . . . .	134.82	1.28	1.28	—
17 “ . . . . .	161.78	1.41	1.41	—
18 “ . . . . .	160.76	1.51	1.51	—
19 “ . . . . .	79.88	1.61	1.61	—
20 “ . . . . .	83.87	1.67	1.67	—
21 “ . . . . .	68.89	1.73	1.73	—
22 “ . . . . .	54.92	1.74	1.74	—
23 “ . . . . .	42.94	1.70	1.70	—
24 “ . . . . .	26.96	1.64	1.64	—
25 “ . . . . .	25.97	1.58	1.58	—
26 “ . . . . .	12.00	1.52	1.52	—
27 “ . . . . .	5.00	1.50	1.50	—
28 “ . . . . .	5.01	1.50	1.50	—
29 “ . . . . .	1.01	1.51	1.51	—
30 “ . . . . .	1.02	1.52	1.52	—
31 “ . . . . .	1.01	1.57	1.57	—
32 “ . . . . .	1.00	1.63	1.63	—
33 “ . . . . .	0.01	1.72	1.72	—
34 “ . . . . .	—	1.84	1.84	—
35-39 years . . . . .	—	3.58	2.30	1.27
40-44 “ . . . . .	—	4.10	3.47	0.64
45-49 “ . . . . .	—	8.01	5.44	2.56
50-54 “ . . . . .	—	14.48	8.83	5.65
55-59 “ . . . . .	—	27.91	13.61	14.30
60-64 “ . . . . .	—	108.72	20.18	88.54
65-69 “ . . . . .	—	125.36	31.30	94.07
70-74 “ . . . . .	—	154.21	47.91	106.30
75-79 “ . . . . .	—	175.12	71.33	103.78
80-84 “ . . . . .	—	165.80	109.12	56.69

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.

TABLE 9 A. Current Working Life Table for Males: Saskatchewan, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	96,708	4,835	50	58.36	48.79	9.57
16 " . . . . .	96,579	11,107	115	57.43	47.84	9.59
17 " . . . . .	96,427	20,443	212	56.52	46.91	9.61
18 " . . . . .	96,258	36,674	381	55.61	45.99	9.62
19 " . . . . .	96,074	53,898	561	54.71	45.07	9.64
20 " . . . . .	95,880	60,117	627	53.82	44.16	9.66
21 " . . . . .	95,677	68,026	711	52.93	43.25	9.68
22 " . . . . .	95,470	74,467	780	52.04	42.34	9.70
23 " . . . . .	95,264	79,545	835	51.15	41.43	9.72
24 " . . . . .	95,064	83,466	878	50.26	40.52	9.74
25 " . . . . .	94,873	86,050	907	49.37	39.60	9.77
26 " . . . . .	94,694	87,876	928	48.46	38.68	9.78
27 " . . . . .	94,523	88,568	937	47.55	37.75	9.80
28 " . . . . .	94,356	88,506	938	46.63	36.82	9.81
29 " . . . . .	94,189	88,538	940	45.72	35.88	9.84
30 " . . . . .	94,022	88,381	940	44.80	34.94	9.86
31 " . . . . .	93,852	88,127	939	43.87	34.02	9.85
32 " . . . . .	93,680	87,872	938	42.95	33.12	9.83
33 " . . . . .	93,507	87,710	938	42.03	32.20	9.83
34 " . . . . .	93,333	87,546	938	41.11	31.26	9.85
35 " . . . . .	93,160	87,291	937	40.18	30.33	9.85
36 " . . . . .	92,985	87,127	937	39.26	29.40	9.86
37 " . . . . .	92,802	86,955	937	38.33	28.46	9.87
38 " . . . . .	92,602	86,768	937	37.41	27.52	9.89
39 " . . . . .	92,378	86,558	937	36.49	26.58	9.91
40 " . . . . .	92,123	86,319	937	35.59	25.65	9.94
41 " . . . . .	91,835	86,049	937	34.69	24.72	9.97
42 " . . . . .	91,518	85,661	936	33.80	23.81	9.99
43 " . . . . .	91,175	85,340	936	32.92	22.91	10.01
44 " . . . . .	90,811	84,817	934	32.05	22.02	10.03
45 " . . . . .	90,429	84,189	931	31.18	21.17	10.01
46 " . . . . .	90,028	83,546	928	30.31	20.32	9.99
47 " . . . . .	89,601	82,881	925	29.45	19.48	9.97
48 " . . . . .	89,143	82,368	924	28.59	18.61	9.98
49 " . . . . .	88,649	81,734	922	27.74	17.74	10.00

TABLE 9 A. Current Working Life Table for Males:  
Saskatchewan, 1971 — Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	88,114	81,065	920	26.90	16.88	10.02
51 " . . . . .	87,535	80,357	918	26.07	16.02	10.05
52 " . . . . .	86,911	79,350	913	25.24	15.18	10.06
53 " . . . . .	86,242	78,135	906	24.43	14.39	10.04
54 " . . . . .	85,528	76,719	897	23.62	13.63	9.99
55 " . . . . .	84,770	75,276	888	22.82	12.87	9.95
56 " . . . . .	83,962	73,635	877	22.03	12.13	9.90
57 " . . . . .	83,095	71,794	864	21.24	11.41	9.83
58 " . . . . .	82,157	69,916	851	20.47	10.69	9.78
59 " . . . . .	81,140	67,833	836	19.71	9.98	9.73
60 " . . . . .	80,038	65,551	819	18.96	9.29	9.67
61 " . . . . .	78,844	63,154	801	18.23	8.61	9.62
62 " . . . . .	77,553	60,646	782	17.51	7.93	9.58
63 " . . . . .	76,159	57,957	761	16.80	7.26	9.54
64 " . . . . .	74,664	55,177	739	16.12	6.59	9.53
65 " . . . . .	73,063	40,842	559	15.44	6.61	8.83
66 " . . . . .	71,352	36,960	518	14.79	7.11	7.68
67 " . . . . .	69,523	33,232	478	14.14	6.83	7.31
68 " . . . . .	67,570	29,731	440	13.52	6.55	6.97
69 " . . . . .	65,493	26,328	402	12.91	6.30	6.61
70 " . . . . .	63,291	23,164	366	12.33	6.07	6.26
71 " . . . . .	60,964	20,179	331	11.76	5.86	5.90
72 " . . . . .	58,506	17,435	298	11.21	5.69	5.52
73 " . . . . .	55,915	14,929	267	10.68	5.53	5.15
74 " . . . . .	53,192	12,660	238	10.18	5.40	4.78
75 " . . . . .	50,347	10,623	211	9.70	5.32	4.38
76 " . . . . .	47,399	8,816	186	9.24	5.28	3.96
77 " . . . . .	44,371	7,277	164	8.81	5.28	3.53
78 " . . . . .	41,290	5,946	144	8.41	5.32	3.09
79 " . . . . .	38,183	4,811	126	8.02	5.44	2.58
80 " . . . . .	35,078	3,929	112	7.66	5.59	2.07
81 " . . . . .	32,005	3,201	100	7.33	5.75	1.58
82 " . . . . .	28,996	2,668	92	7.01	5.90	1.11
83 " . . . . .	26,081	2,269	87	6.71	5.93	0.78
84 " . . . . .	23,286	1,979	85	6.43	5.82	0.61
85 " and over <sup>1</sup> . .	21,921	1,688	77	6.17	5.66	0.51

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 9B. Current Working Life Table for Males: Saskatchewan, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	64.90	1.33	1.33	—
16 " . . . . .	96.85	1.57	1.57	—
17 " . . . . .	168.70	1.75	1.75	—
18 " . . . . .	179.67	1.91	1.91	—
19 " . . . . .	65.87	2.02	2.02	—
20 " . . . . .	83.82	2.12	2.12	—
21 " . . . . .	68.87	2.16	2.16	—
22 " . . . . .	54.88	2.16	2.16	—
23 " . . . . .	42.92	2.10	2.10	—
24 " . . . . .	28.96	2.01	2.01	—
25 " . . . . .	20.97	1.89	1.89	—
26 " . . . . .	8.99	1.81	1.81	—
27 " . . . . .	2.01	1.77	1.77	—
28 " . . . . .	1.01	1.77	1.77	—
29 " . . . . .	—	1.77	1.77	—
30 " . . . . .	—	2.87	1.81	1.06
31 " . . . . .	—	2.90	1.83	1.06
32 " . . . . .	—	1.85	1.85	—
33 " . . . . .	—	1.86	1.86	—
34 " . . . . .	—	2.92	1.85	1.07
35-39 years . . . . .	—	2.24	2.24	—
40-44 " . . . . .	—	4.98	3.70	1.28
45-49 " . . . . .	—	7.53	5.17	2.37
50-54 " . . . . .	—	14.70	7.68	7.02
55-59 " . . . . .	—	27.28	11.33	15.95
60-64 " . . . . .	—	85.68	17.38	68.30
65-69 " . . . . .	—	107.18	27.16	80.02
70-74 " . . . . .	—	144.29	42.41	101.88
75-79 " . . . . .	—	180.37	65.70	114.67
80-84 " . . . . .	—	159.04	98.31	60.73

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 10A. Current Working Life Table for Males: Alberta, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	97,031	4,463	46	57.47	47.89	9.58
16 " . . . . .	96,892	8,623	89	56.54	46.95	9.59
17 " . . . . .	96,729	23,021	238	55.63	46.03	9.60
18 " . . . . .	96,549	39,682	411	54.73	45.11	9.62
19 " . . . . .	96,357	55,309	574	53.83	44.19	9.64
20 " . . . . .	96,156	60,290	627	52.94	43.28	9.66
21 " . . . . .	95,952	68,222	711	52.05	42.37	9.68
22 " . . . . .	95,746	74,682	780	51.16	41.46	9.70
23 " . . . . .	95,544	79,970	837	50.27	40.55	9.72
24 " . . . . .	95,352	84,005	881	49.38	39.63	9.75
25 " . . . . .	95,173	87,083	915	48.47	38.71	9.76
26 " . . . . .	95,008	89,118	938	47.56	37.78	9.78
27 " . . . . .	94,854	90,016	949	46.64	36.84	9.80
28 " . . . . .	94,705	90,159	952	45.71	35.90	9.81
29 " . . . . .	94,558	90,397	956	44.78	34.95	9.83
30 " . . . . .	94,410	90,445	958	43.85	34.01	9.84
31 " . . . . .	94,260	90,395	959	42.92	33.06	9.86
32 " . . . . .	94,105	90,341	960	41.99	32.11	9.88
33 " . . . . .	93,944	90,280	961	41.06	31.18	9.88
34 " . . . . .	93,778	89,933	959	40.13	30.25	9.88
35 " . . . . .	93,604	89,766	959	39.20	29.34	9.86
36 " . . . . .	93,420	89,496	958	38.27	28.41	9.86
37 " . . . . .	93,225	89,310	958	37.35	27.48	9.87
38 " . . . . .	93,015	89,108	958	36.43	26.54	9.89
39 " . . . . .	92,787	88,797	957	35.51	25.61	9.90
40 " . . . . .	92,539	88,560	957	34.60	24.69	9.91
41 " . . . . .	92,270	88,302	957	33.70	23.76	9.94
42 " . . . . .	91,975	88,020	957	32.80	22.83	9.97
43 " . . . . .	91,653	87,529	955	31.91	21.92	9.99
44 " . . . . .	91,300	86,826	951	31.02	21.07	9.95
45 " . . . . .	90,913	86,095	947	30.15	20.24	9.91
46 " . . . . .	90,492	85,334	943	29.28	19.41	9.87
47 " . . . . .	90,033	84,541	939	28.42	18.59	9.83
48 " . . . . .	89,536	83,895	937	27.57	17.74	9.83
49 " . . . . .	89,002	83,217	935	26.72	16.88	9.84

TABLE 10 A. Current Working Life Table for Males:  
Alberta, 1971 — Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	$\overset{\circ}{e}_x$	$\overset{\circ}{e}w_x$	$\overset{\circ}{e}r_x$
50 years . . . . .	88,430	82,417	932	25.89	16.02	9.87
51 " . . . . .	87,815	81,492	928	25.06	15.19	9.87
52 " . . . . .	87,152	80,441	923	24.24	14.36	9.88
53 " . . . . .	86,431	79,344	918	23.43	13.55	9.88
54 " . . . . .	85,648	78,111	912	22.63	12.74	9.89
55 " . . . . .	84,795	76,655	904	21.84	11.96	9.88
56 " . . . . .	83,869	74,979	894	21.06	11.19	9.87
57 " . . . . .	82,868	73,090	882	20.30	10.45	9.85
58 " . . . . .	81,790	70,994	868	19.55	9.72	9.83
59 " . . . . .	80,637	68,703	852	18.81	9.01	9.80
60 " . . . . .	79,409	66,148	833	18.08	8.32	9.76
61 " . . . . .	78,098	63,259	810	17.37	7.64	9.73
62 " . . . . .	76,693	60,204	785	16.66	6.99	9.67
63 " . . . . .	75,180	56,836	756	15.97	6.34	9.63
64 " . . . . .	73,549	53,249	724	15.30	5.71	9.59
65 " . . . . .	71,792	36,255	505	14.64	5.83	8.81
66 " . . . . .	69,908	32,437	464	14.01	6.55	7.46
67 " . . . . .	67,896	28,788	424	13.39	6.28	7.11
68 " . . . . .	65,762	25,318	385	12.79	6.05	6.74
69 " . . . . .	63,513	22,103	348	12.20	5.83	6.37
70 " . . . . .	61,154	19,141	313	11.64	5.63	6.01
71 " . . . . .	58,690	16,433	280	11.08	5.45	5.63
72 " . . . . .	56,123	13,919	248	10.55	5.31	5.24
73 " . . . . .	53,458	11,761	220	10.03	5.19	4.84
74 " . . . . .	50,708	9,787	193	9.52	5.10	4.42
75 " . . . . .	47,885	8,093	169	9.03	5.05	3.98
76 " . . . . .	44,998	6,660	148	8.56	5.02	3.54
77 " . . . . .	42,055	5,467	130	8.10	5.01	3.09
78 " . . . . .	39,067	4,454	114	7.66	5.02	2.64
79 " . . . . .	36,052	3,677	102	7.23	5.03	2.20
80 " . . . . .	33,033	3,105	94	6.82	4.94	1.88
81 " . . . . .	30,030	2,643	88	6.42	4.75	1.67
82 " . . . . .	27,063	2,246	83	6.04	4.50	1.54
83 " . . . . .	24,156	1,908	79	5.68	4.22	1.46
84 " . . . . .	21,337	1,600	75	5.33	3.91	1.42
85 " and over <sup>1</sup> . .	19,953	1,277	64	5.00	3.65	1.35

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  $\overset{\circ}{e}_x$ ,  $\overset{\circ}{e}w_x$  and  $\overset{\circ}{e}r_x$  figures relate to exact age 85.

TABLE 10B. Current Working Life Table for Males: Alberta, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	42.90	1.43	1.43	—
16 “ . . . . .	148.75	1.68	1.68	—
17 “ . . . . .	172.69	1.86	1.86	—
18 “ . . . . .	162.68	1.99	1.99	—
19 “ . . . . .	52.90	2.09	2.09	—
20 “ . . . . .	83.83	2.12	2.12	—
21 “ . . . . .	68.86	2.15	2.15	—
22 “ . . . . .	56.88	2.11	2.11	—
23 “ . . . . .	43.92	2.01	2.01	—
24 “ . . . . .	33.94	1.88	1.88	—
25 “ . . . . .	22.98	1.73	1.73	—
26 “ . . . . .	10.98	1.62	1.62	—
27 “ . . . . .	4.00	1.57	1.57	—
28 “ . . . . .	3.01	1.55	1.55	—
29 “ . . . . .	2.02	1.57	1.57	—
30 “ . . . . .	1.02	1.59	1.59	—
31 “ . . . . .	1.01	1.64	1.64	—
32 “ . . . . .	1.00	1.71	1.71	—
33 “ . . . . .	—	3.84	1.77	2.08
34 “ . . . . .	—	1.86	1.86	—
35-39 years . . . . .	—	2.70	2.28	0.42
40-44 “ . . . . .	—	5.63	3.54	2.09
45-49 “ . . . . .	—	8.69	5.51	3.18
50-54 “ . . . . .	—	14.39	8.33	6.06
55-59 “ . . . . .	—	29.04	12.93	16.11
60-64 “ . . . . .	—	106.03	18.99	87.04
65-69 “ . . . . .	—	119.87	30.13	89.73
70-74 “ . . . . .	—	158.10	45.01	113.09
75-79 “ . . . . .	—	174.28	67.79	106.50
80-84 “ . . . . .	—	156.78	105.95	50.82

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.

TABLE 11 A. Current Working Life Table for Males: British Columbia, 1971

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 population	Average number of years remaining to persons in the labour force at exact age $x$		
	In the population	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
15 years . . . . .	97,068	3,592	37	56.85	46.62	10.23
16 " . . . . .	96,940	9,694	100	55.92	45.67	10.25
17 " . . . . .	96,787	21,874	226	55.00	44.74	10.26
18 " . . . . .	96,616	37,680	390	54.09	43.81	10.28
19 " . . . . .	96,431	55,737	578	53.19	42.89	10.30
20 " . . . . .	96,236	61,495	639	52.29	41.97	10.32
21 " . . . . .	96,032	69,239	721	51.40	41.06	10.34
22 " . . . . .	95,825	75,510	788	50.51	40.15	10.36
23 " . . . . .	95,618	80,415	841	49.62	39.23	10.39
24 " . . . . .	95,418	84,063	881	48.72	38.31	10.41
25 " . . . . .	95,227	86,371	907	47.82	37.39	10.43
26 " . . . . .	95,046	88,108	927	46.92	36.46	10.46
27 " . . . . .	94,873	88,991	938	46.00	35.53	10.47
28 " . . . . .	94,702	89,304	943	45.08	34.59	10.49
29 " . . . . .	94,530	89,614	948	44.16	33.66	10.50
30 " . . . . .	94,353	89,730	951	43.24	32.72	10.52
31 " . . . . .	94,171	89,839	954	42.33	31.78	10.55
32 " . . . . .	93,984	89,849	956	41.41	30.84	10.57
33 " . . . . .	93,791	89,664	956	40.49	29.90	10.59
34 " . . . . .	93,595	89,477	956	39.57	28.96	10.61
35 " . . . . .	93,396	89,473	958	38.66	28.05	10.61
36 " . . . . .	93,191	89,184	957	37.74	27.10	10.64
37 " . . . . .	92,975	88,884	956	36.82	26.18	10.64
38 " . . . . .	92,742	88,569	955	35.91	25.27	10.64
39 " . . . . .	92,486	88,324	955	35.00	24.35	10.65
40 " . . . . .	92,201	87,960	954	34.10	23.43	10.67
41 " . . . . .	91,886	87,567	953	33.21	22.53	10.68
42 " . . . . .	91,540	87,146	952	32.33	21.64	10.69
43 " . . . . .	91,165	86,516	949	31.46	20.76	10.70
44 " . . . . .	90,762	85,770	945	30.59	19.92	10.67
45 " . . . . .	90,332	85,002	941	29.73	19.10	10.63
46 " . . . . .	89,872	84,120	936	28.87	18.28	10.59
47 " . . . . .	89,378	83,300	932	28.02	17.46	10.56
48 " . . . . .	88,845	82,537	929	27.18	16.62	10.56
49 " . . . . .	88,270	81,738	926	26.35	15.77	10.58

TABLE 11 A. Current Working Life Table for Males:  
British Columbia, 1971 - Concluded

Age	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Labour force per 1,000 popula- tion	Average number of years remaining to persons in the labour force at exact age $x$		
	In the popula- tion	In the labour force		Years of life	Years of labour force activity	Years of retirement
$x$	$L_x$	$Lw_x$	$1,000 w_x$	${}^o e_x$	${}^o ew_x$	${}^o er_x$
50 years . . . . .	87,649	80,812	922	25.52	14.94	10.58
51 " . . . . .	86,979	79,760	917	24.71	14.11	10.60
52 " . . . . .	86,256	78,665	912	23.90	13.30	10.60
53 " . . . . .	85,476	77,612	908	23.11	12.47	10.64
54 " . . . . .	84,639	76,514	904	22.32	11.64	10.68
55 " . . . . .	83,743	75,117	897	21.54	10.82	10.72
56 " . . . . .	82,781	73,427	887	20.78	10.04	10.74
57 " . . . . .	81,746	71,446	874	20.02	9.28	10.74
58 " . . . . .	80,630	69,019	856	19.28	8.55	10.73
59 " . . . . .	79,428	66,243	834	18.55	7.86	10.69
60 " . . . . .	78,135	63,055	807	17.84	7.20	10.64
61 " . . . . .	76,745	59,401	774	17.14	6.57	10.57
62 " . . . . .	75,254	55,312	735	16.45	5.98	10.47
63 " . . . . .	73,655	50,675	688	15.79	5.43	10.36
64 " . . . . .	71,948	45,615	634	15.13	4.92	10.21
65 " . . . . .	70,132	28,684	409	14.50	5.15	9.35
66 " . . . . .	68,203	24,894	365	13.87	6.07	7.80
67 " . . . . .	66,163	21,503	325	13.27	5.93	7.34
68 " . . . . .	64,011	18,435	288	12.68	5.82	6.86
69 " . . . . .	61,755	15,748	255	12.11	5.72	6.39
70 " . . . . .	59,398	13,365	225	11.55	5.63	5.92
71 " . . . . .	56,945	11,275	198	11.01	5.57	5.44
72 " . . . . .	54,395	9,465	174	10.48	5.53	4.95
73 " . . . . .	51,751	7,918	153	9.97	5.50	4.47
74 " . . . . .	49,024	6,618	135	9.47	5.49	3.98
75 " . . . . .	46,224	5,501	119	8.99	5.50	3.49
76 " . . . . .	43,362	4,553	105	8.53	5.53	3.00
77 " . . . . .	40,451	3,802	94	8.08	5.56	2.52
78 " . . . . .	37,504	3,188	85	7.65	5.56	2.09
79 " . . . . .	34,541	2,694	78	7.24	5.53	1.71
80 " . . . . .	31,586	2,274	72	6.84	5.46	1.38
81 " . . . . .	28,660	1,978	69	6.47	5.31	1.16
82 " . . . . .	25,786	1,728	67	6.10	5.02	1.08
83 " . . . . .	22,987	1,540	67	5.76	4.64	1.12
84 " . . . . .	20,289	1,319	65	5.43	4.23	1.20
85 " and over <sup>1</sup>	18,969	1,081	57	5.11	3.94	1.17

<sup>1</sup> The  $L_x$ ,  $Lw_x$  and  $w_x$  figures relate to all ages 85 and over combined; the  ${}^o e_x$ ,  ${}^o ew_x$  and  ${}^o er_x$  figures relate to exact age 85.

TABLE 11 B. Current Working Life Table for Males: British Columbia, 1971

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
$x$	$1,000 A_x$	$1,000 Q_x^s$	$1,000 Q_x^d$	$1,000 Q_x^r$
15 years . . . . .	62.90	1.32	1.32	—
16 " . . . . .	125.80	1.58	1.58	—
17 " . . . . .	163.71	1.77	1.77	—
18 " . . . . .	187.65	1.91	1.91	—
19 " . . . . .	60.89	2.02	2.02	—
20 " . . . . .	81.88	2.12	2.12	—
21 " . . . . .	66.86	2.16	2.16	—
22 " . . . . .	52.90	2.16	2.16	—
23 " . . . . .	39.92	2.09	2.09	—
24 " . . . . .	25.96	2.00	2.00	—
25 " . . . . .	19.98	1.90	1.90	—
26 " . . . . .	10.99	1.82	1.82	—
27 " . . . . .	5.00	1.80	1.80	—
28 " . . . . .	5.00	1.82	1.82	—
29 " . . . . .	3.01	1.87	1.87	—
30 " . . . . .	3.00	1.93	1.93	—
31 " . . . . .	2.01	1.99	1.99	—
32 " . . . . .	1.98	2.05	2.05	—
33 " . . . . .	0.04	2.09	2.09	—
34 " . . . . .	0.01	2.13	2.13	—
35-39 years . . . . .	—	3.41	2.57	0.83
40-44 " . . . . .	—	6.81	4.08	2.73
45-49 " . . . . .	—	10.06	6.00	4.06
50-54 " . . . . .	—	14.51	9.05	5.46
55-59 " . . . . .	—	34.36	13.62	20.74
60-64 " . . . . .	—	136.33	20.01	116.32
65-69 " . . . . .	—	141.63	30.86	110.77
70-74 " . . . . .	—	162.67	46.05	116.62
75-79 " . . . . .	—	161.90	69.99	91.92
80-84 " . . . . .	—	135.46	108.14	27.32

Note: Figures for a single year of age  $x$  are rates of movement in the interval between  $x$  and  $x + 1$ ; figures for five-year age groups are simple averages of the rates for single years of age.



TABLE 12. Average Number of Years of Life, Labour Force Activity and Non-labour Force Activity remaining to Males in the Population at Selected Ages: Canada, 1921 - 1971

Year and item	Exact age x						
	0 (at birth)	1	5	10	15	20	25
1921:							
Life ( $e^{\circ}x$ ) . . . . .	..	..	61.0	57.0	52.6	48.4	44.4
Labour force activity ( $e^{\circ}wx$ ) . . . . .	..	..	44.4	45.2	45.2	42.2	38.3
Non-labour force activity ( $e^{\circ}rx$ ) . . .	..	..	16.6	11.8	7.4	6.2	6.1
1931:							
Life ( $e^{\circ}x$ ) . . . . .	60.0	64.7	62.3	58.0	53.4	49.0	44.8
Labour force activity ( $e^{\circ}wx$ ) . . . . .	39.6	43.4	44.5	45.0	45.0	42.3	38.3
Non-labour force activity ( $e^{\circ}rx$ ) . . .	20.4	21.3	17.8	13.0	8.4	6.7	6.5
1941:							
Life ( $e^{\circ}x$ ) . . . . .	63.0	66.1	63.2	58.7	54.1	49.6	45.2
Labour force activity ( $e^{\circ}wx$ ) . . . . .	40.9	43.6	44.3	44.7	44.9	42.2	38.2
Non-labour force activity ( $e^{\circ}rx$ ) . . .	22.1	22.5	18.9	14.0	9.2	7.4	7.0
1951:							
Life ( $e^{\circ}x$ ) . . . . .	66.3	68.3	64.9	60.2	55.4	50.8	46.2
Labour force activity ( $e^{\circ}wx$ ) . . . . .	41.9	43.8	44.2	44.4	44.4	41.8	37.6
Non-labour force activity ( $e^{\circ}rx$ ) . . .	24.4	24.5	20.7	15.8	11.0	9.0	8.6
1961:							
Life ( $e^{\circ}x$ ) . . . . .	68.4	69.5	65.8	61.0	56.2	51.5	46.9
Labour force activity ( $e^{\circ}wx$ ) . . . . .	42.1	43.5	43.7	43.8	43.8	41.7	37.6
Non-labour force activity ( $e^{\circ}rx$ ) . . .	26.3	26.0	22.1	17.2	12.4	9.8	9.3
1971:							
Life ( $e^{\circ}x$ ) . . . . .	69.3	69.8	66.0	61.2	56.3	51.7	47.2
Labour force activity ( $e^{\circ}wx$ ) . . . . .	43.7	44.6	44.8	44.9	45.0	40.6	36.2
Non-labour force activity ( $e^{\circ}rx$ ) . . .	25.6	25.2	21.2	16.3	11.3	11.1	11.0

.. Not available.

TABLE 13. Average Number of Years of Life, Labour Force Activity and Non-labour Force Activity remaining to Males in the Population at Selected Ages: Canada and Provinces, 1971

Item	Exact age x						
	0 (at birth)	1	5	10	15	20	25
Canada:							
Life ( $e^{\circ}x$ ) . . . . .	69.3	69.8	66.0	61.2	56.3	51.7	47.2
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	43.7	44.6	44.8	44.9	45.0	40.6	36.2
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	25.6	25.2	21.2	16.3	11.3	11.1	11.0
Newfoundland:							
Life ( $e^{\circ}x$ ) . . . . .	69.3	70.0	66.3	61.5	56.7	51.9	47.2
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	34.2	35.1	35.2	35.3	35.4	34.4	31.0
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	35.1	34.9	31.1	26.2	21.3	17.5	16.2
Prince Edward Island:							
Life ( $e^{\circ}x$ ) . . . . .	69.3	70.1	66.4	61.6	56.8	52.2	47.6
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	39.3	40.3	40.5	40.6	40.8	39.5	35.9
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	29.7	29.8	25.9	21.0	16.0	12.7	11.7
Nova Scotia:							
Life ( $e^{\circ}x$ ) . . . . .	68.7	69.1	65.3	60.4	55.6	51.0	46.5
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	37.5	38.3	38.4	38.5	38.6	37.8	34.3
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	31.2	30.8	26.9	21.9	17.0	13.2	12.2
New Brunswick:							
Life ( $e^{\circ}x$ ) . . . . .	69.1	69.5	65.8	60.9	56.1	51.6	47.2
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	37.3	38.0	38.2	38.3	38.4	37.5	34.2
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	31.8	31.5	27.6	22.6	17.7	14.1	13.0
Quebec:							
Life ( $e^{\circ}x$ ) . . . . .	68.3	68.7	65.0	60.2	55.4	50.7	46.2
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	38.2	39.0	39.1	39.2	39.4	38.5	35.2
Non-labour force activity ( $e^{\circ}r'x$ ) . . .	30.1	29.7	25.9	21.0	16.0	12.2	11.0

**TABLE 13. Average Number of Years of Life, Labour Force Activity and Non-labour Force Activity remaining to Males in the Population at Selected Ages: Canada and Provinces, 1971 – Concluded**

Item	Exact age $x$						
	0 (at birth)	1	5	10	15	20	25
Ontario:							
Life ( $e^{\circ}x$ ) . . . . .	69.6	69.8	66.0	61.2	56.3	51.6	47.0
Labour force activity ( $e^{\circ}wx$ ) . . . . .	40.3	41.0	41.1	41.2	41.3	40.5	37.0
Non-labour force activity ( $e^{\circ}rx$ ) . . . . .	29.3	28.8	24.9	20.0	15.0	11.1	10.0
Manitoba:							
Life ( $e^{\circ}x$ ) . . . . .	70.2	70.6	66.9	62.1	57.3	52.7	48.1
Labour force activity ( $e^{\circ}wx$ ) . . . . .	39.8	40.7	40.8	41.0	41.1	40.1	36.7
Non-labour force activity ( $e^{\circ}rx$ ) . . . . .	30.4	29.9	26.1	21.1	16.2	12.6	11.4
Saskatchewan:							
Life ( $e^{\circ}x$ ) . . . . .	71.1	71.8	68.1	63.2	58.4	53.8	49.4
Labour force activity ( $e^{\circ}wx$ ) . . . . .	40.2	41.2	41.4	41.5	41.6	40.6	37.2
Non-labour force activity ( $e^{\circ}rx$ ) . . . . .	30.9	30.6	26.7	21.7	16.8	13.2	12.2
Alberta:							
Life ( $e^{\circ}x$ ) . . . . .	70.4	70.9	67.2	62.3	57.5	52.9	48.5
Labour force activity ( $e^{\circ}wx$ ) . . . . .	40.3	41.2	41.3	41.4	41.5	40.5	37.1
Non-labour force activity ( $e^{\circ}rx$ ) . . . . .	30.1	29.7	25.9	20.9	16.0	12.4	11.4
British Columbia:							
Life ( $e^{\circ}x$ ) . . . . .	69.9	70.3	66.6	61.7	56.9	52.3	47.8
Labour force activity ( $e^{\circ}wx$ ) . . . . .	39.0	39.8	40.0	40.1	40.2	39.2	35.7
Non-labour force activity ( $e^{\circ}rx$ ) . . . . .	30.9	30.5	26.6	21.6	16.7	13.1	12.1

TABLE 14. Average Number of Years of Life, Labour Force Activity and Non-labour Force Activity remaining to Males in the Population at Selected Ages: Canada and Regions, 1961

Item	Exact age $x$						
	0 (at birth)	1	5	10	15	20	25
Canada:							
Life ( $e^{\circ}x$ ) . . . . .	68.4	69.5	65.8	61.0	56.2	51.5	46.9
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	42.1	43.5	43.7	43.8	43.8	41.7	37.6
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	26.3	26.0	22.1	17.2	12.4	9.8	9.3
Atlantic Provinces:							
Life ( $e^{\circ}x$ ) . . . . .	68.6	70.1	66.4	61.6	56.8	52.2	47.6
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	40.4	41.8	42.0	42.2	42.2	40.2	36.3
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	28.2	28.3	24.4	19.4	14.6	12.0	11.3
Quebec:							
Life ( $e^{\circ}x$ ) . . . . .	67.3	68.7	65.1	60.3	55.5	50.8	46.2
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	41.2	42.7	42.9	43.1	43.1	41.0	36.9
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	26.1	26.0	22.2	17.2	12.4	9.8	9.3
Ontario:							
Life ( $e^{\circ}x$ ) . . . . .	68.3	69.1	65.4	60.6	55.7	51.0	46.4
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	42.9	44.1	44.3	44.4	44.4	42.3	38.2
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	25.4	25.0	21.1	16.2	11.3	8.7	8.2
Prairie Provinces:							
Life ( $e^{\circ}x$ ) . . . . .	69.8	71.0	67.3	62.4	57.6	52.9	48.3
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	43.6	45.0	45.2	45.3	45.3	43.0	38.8
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	26.2	26.0	22.1	17.1	12.3	9.9	9.5
British Columbia:							
Life ( $e^{\circ}x$ ) . . . . .	68.9	69.8	66.2	61.4	56.5	51.8	47.3
Labour force activity ( $e^{\circ}w'x$ ) . . . . .	41.3	42.4	42.6	42.8	42.8	40.9	36.9
Non-labour force activity ( $e^{\circ}r'x$ ) . . . . .	27.6	27.4	23.6	18.6	13.7	10.9	10.4

TABLE 15. Male Labour Force per 1,000 Population for Canada on a Cohort Basis ( $1,000 W_{xt}$ )  
for Selected Years of Birth, 1851-1951

Age (x)	Year of birth (t)										
	1951	1941	1931	1921	1911	1901	1891	1881	1871	1861	1851
14 years	57	112	122	191	315	..	..	..	..	..	..
15 "	112	232	332	389	468	..	..	..	..	..	..
16 "	189	385	488	536	607	..	..	..	..	..	..
17 "	285	520	629	663	717	..	..	..	..	..	..
18 "	404	643	738	752	799	..	..	..	..	..	..
19 "	521	744	814	814	854	..	..	..	..	..	..
20 "	606	814	861	859	889	897	..	..	..	..	..
21 "	..	828	889	893	911	918	..	..	..	..	..
22 "	..	841	910	917	928	935	..	..	..	..	..
23 "	..	855	927	935	942	948	..	..	..	..	..
24 "	..	868	941	948	952	958	..	..	..	..	..
25 "	..	882	952	958	961	965	..	..	..	..	..
26 "	..	896	961	965	968	970	..	..	..	..	..
27 "	..	909	968	970	972	974	..	..	..	..	..
28 "	..	923	972	973	975	976	..	..	..	..	..
29 "	..	936	975	976	977	977	..	..	..	..	..
30 "	..	950	977	977	978	978	978	..	..	..	..
31 "	..	..	974	978	978	978	978	..	..	..	..
32 "	..	..	971	978	978	978	978	..	..	..	..
33 "	..	..	967	978	978	978	978	..	..	..	..
34 "	..	..	964	978	978	978	978	..	..	..	..
35 "	..	..	961	978	978	978	978	..	..	..	..
36 "	..	..	958	978	978	978	978	..	..	..	..
37 "	..	..	955	978	977	978	978	..	..	..	..
38 "	..	..	951	977	976	977	977	..	..	..	..
39 "	..	..	948	976	974	976	976	..	..	..	..
40 "	..	..	945	975	973	976	976	976	..	..	..
41 "	..	..	..	970	971	975	975	975	..	..	..
42 "	..	..	..	964	970	973	974	974	..	..	..
43 "	..	..	..	959	968	972	974	974	..	..	..
44 "	..	..	..	953	967	970	973	973	..	..	..
45 "	..	..	..	948	966	967	972	972	..	..	..
46 "	..	..	..	943	966	966	971	971	..	..	..
47 "	..	..	..	937	964	963	970	970	..	..	..
48 "	..	..	..	931	962	960	970	970	..	..	..
49 "	..	..	..	926	959	956	969	969	..	..	..
50 "	..	..	..	921	956	951	967	967	967	..	..

TABLE 15. Male Labour Force per 1,000 Population for Canada on a Cohort Basis  
(1,000  $W_{xt}$ ) for Selected Years of Birth, 1851-1951 — Concluded

Age (x)	Year of birth (t)										
	1951	1941	1931	1921	1911	1901	1891	1881	1871	1861	1851
51 years	..	..	..	..	942	947	963	965	965	..	..
52 "	..	..	..	..	929	941	958	962	963	..	..
53 "	..	..	..	..	915	937	951	959	960	..	..
54 "	..	..	..	..	902	932	943	954	956	..	..
55 "	..	..	..	..	888	926	935	948	951	..	..
56 "	..	..	..	..	875	918	925	942	945	..	..
57 "	..	..	..	..	861	908	913	934	937	..	..
58 "	..	..	..	..	848	895	899	924	928	..	..
59 "	..	..	..	..	834	877	881	911	915	..	..
60 "	..	..	..	..	821	855	858	895	899	912	..
61 "	..	..	..	..	..	796	831	869	879	894	..
62 "	..	..	..	..	..	737	796	835	855	872	..
63 "	..	..	..	..	..	678	754	794	826	846	..
64 "	..	..	..	..	..	619	709	744	789	813	..
65 "	..	..	..	..	..	560	610	677	744	777	..
66 "	..	..	..	..	..	501	557	617	693	736	..
67 "	..	..	..	..	..	442	504	557	636	691	..
68 "	..	..	..	..	..	383	451	499	579	643	..
69 "	..	..	..	..	..	324	399	441	522	593	..
70 "	..	..	..	..	..	265	331	380	469	544	576
71 "	..	..	..	..	..	..	307	333	416	492	529
72 "	..	..	..	..	..	..	283	293	369	442	482
73 "	..	..	..	..	..	..	260	257	326	394	437
74 "	..	..	..	..	..	..	236	225	289	351	394
75 "	..	..	..	..	..	..	212	197	255	312	354
76 "	..	..	..	..	..	..	188	171	226	276	315
77 "	..	..	..	..	..	..	164	147	200	246	280
78 "	..	..	..	..	..	..	141	124	177	219	248
79 "	..	..	..	..	..	..	117	104	157	196	219
80 "	..	..	..	..	..	..	93	85	139	175	193
81 "	..	..	..	..	..	..	..	83	121	155	172
82 "	..	..	..	..	..	..	..	80	103	135	152
83 "	..	..	..	..	..	..	..	78	88	117	134
84 "	..	..	..	..	..	..	..	76	75	102	118

.. Not available.

Source: Table 3.1; and Frank T. Denton and Sylvia Ostry, *Working-Life Tables for Canadian Males* (Ottawa: Queen's Printer, 1969), pp. 55-56.



## COHORT WORKING LIFE TABLES

TABLE 16 A. Cohort Working Life Table for Males entering the Labour Force of Canada in 1971 (or Born in 1956)

Hypothesis A

Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Average number of years remaining to persons in the labour force at exact age $x$		
		In the population	In the labour force	Years of life	Years of labour force activity	Years of retirement
$xt$	$1,000\ wxt$	$lxt$	$Lwxt$	$e^{\circ}xt$	$e^{\circ}wxt$	$e^{\circ}rxt$
15 years . . . . .	39	95,379	3,720	57.39	47.54	9.85
16 " . . . . .	94	95,290	8,957	56.49	46.59	9.90
17 " . . . . .	202	95,178	19,226	55.49	45.64	9.85
18 " . . . . .	350	95,036	33,263	54.62	44.70	9.92
19 " . . . . .	497	94,873	47,152	53.66	43.77	9.89
20 " . . . . .	606	94,707	57,392	52.77	42.84	9.93
21 " . . . . .	693	94,536	65,513	51.87	41.92	9.95
22 " . . . . .	765	94,363	72,188	50.96	40.99	9.97
23 " . . . . .	824	94,194	77,616	50.06	40.07	9.99
24 " . . . . .	870	94,027	81,803	49.14	39.14	10.00
25 " . . . . .	904	93,855	84,845	48.26	38.21	10.05
26 " . . . . .	929	93,678	87,027	47.28	37.28	10.00
27 " . . . . .	943	93,513	88,183	46.44	36.34	10.10
28 " . . . . .	946	93,367	88,325	45.45	35.40	10.05
29 " . . . . .	949	93,232	88,477	44.58	34.46	10.12
30 " . . . . .	950	93,091	88,436	43.62	33.51	10.11
31 " . . . . .	952	92,946	88,485	42.67	32.56	10.11
32 " . . . . .	952	92,797	88,343	41.75	31.61	10.14
33 " . . . . .	952	92,645	88,198	40.80	30.66	10.14
34 " . . . . .	951	92,486	87,954	39.89	29.72	10.17
35 " . . . . .	950	92,317	87,701	38.95	28.81	10.14
36 " . . . . .	949	92,135	87,436	38.02	27.89	10.13
37 " . . . . .	948	91,941	87,160	37.10	26.98	10.12
38 " . . . . .	947	91,731	86,869	36.18	26.06	10.12
39 " . . . . .	946	91,504	86,563	35.26	25.15	10.11
40 " . . . . .	945	91,256	86,237	34.35	24.24	10.11
41 " . . . . .	944	90,982	85,887	33.45	23.33	10.12
42 " . . . . .	942	90,686	85,426	32.55	22.44	10.11
43 " . . . . .	941	90,366	85,034	31.64	21.55	10.09
44 " . . . . .	939	90,017	84,526	30.80	20.66	10.14
45 " . . . . .	936	89,632	83,896	29.90	19.80	10.10
46 " . . . . .	934	89,210	83,322	29.04	18.94	10.10
47 " . . . . .	931	88,747	82,623	28.17	18.08	10.09
48 " . . . . .	928	88,243	81,890	27.33	17.23	10.10
49 " . . . . .	926	87,692	81,203	26.48	16.38	10.10
50 " . . . . .	921	87,090	80,210	25.65	15.54	10.11

TABLE 16 A. Cohort Working Life Table for Males entering the Labour Force  
of Canada in 1971 (or Born in 1956) — Concluded  
Hypothesis A

Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Average number of years remaining to persons in the labour force at exact age $x$		
		In the population	In the labour force	Years of life	Years of labour force activity	Years of retirement
$xt$	$1,000\ wxt$	$1xt$	$Lwxt$	$e^{\circ}xt$	$e^{\circ}wxt$	$e^{\circ}rxt$
51 years . . . . .	915	86,434	79,087	24.85	14.74	10.11
52 " . . . . .	908	85,723	77,836	24.02	13.96	10.06
53 " . . . . .	902	84,957	76,631	23.24	13.17	10.07
54 " . . . . .	898	84,131	75,550	22.44	12.36	10.08
55 " . . . . .	892	83,234	74,245	21.67	11.55	10.12
56 " . . . . .	885	82,262	72,802	20.92	10.75	10.17
57 " . . . . .	873	81,218	70,903	20.16	9.99	10.17
58 " . . . . .	858	80,097	68,723	19.43	9.27	10.16
59 " . . . . .	841	78,894	66,350	18.70	8.56	10.14
60 " . . . . .	821	77,607	63,715	17.98	7.87	10.11
61 " . . . . .	796	76,236	60,684	17.31	7.21	10.10
62 " . . . . .	766	74,746	57,255	16.60	6.57	10.03
63 " . . . . .	740	73,121	54,110	15.96	5.93	10.03
64 " . . . . .	689	71,374	49,177	15.30	5.35	9.95
65 " . . . . .	470	69,541	32,684	14.67	5.55	9.12
66 " . . . . .	420	67,620	28,400	14.10	6.36	7.74
67 " . . . . .	376	65,590	24,662	13.46	6.25	7.21
68 " . . . . .	336	63,447	21,318	12.92	6.14	6.78
69 " . . . . .	300	61,201	18,360	12.31	6.04	6.27
70 " . . . . .	265	58,878	15,603	11.80	5.98	5.82
71 " . . . . .	238	56,487	13,444	11.25	5.92	5.33
72 " . . . . .	213	53,996	11,501	10.73	5.81	4.92
73 " . . . . .	191	51,396	9,817	10.21	5.72	4.49
74 " . . . . .	172	48,713	8,379	9.74	5.63	4.11
75 " . . . . .	152	45,987	6,990	9.23	5.57	3.66
76 " . . . . .	138	43,221	5,964	8.83	5.53	3.30
77 " . . . . .	124	40,426	5,013	8.32	5.44	2.88
78 " . . . . .	112	37,613	4,213	7.95	5.39	2.56
79 " . . . . .	102	34,791	3,549	7.46	5.32	2.14
80 " . . . . .	93	32,016	2,977	7.10	5.24	1.86
81 " . . . . .	85	29,347	2,494	6.66	5.16	1.50
82 " . . . . .	79	26,546	2,097	6.26	5.06	1.20
83 " . . . . .	74	23,521	1,741	5.92	4.96	0.96
84 " . . . . .	70	20,433	1,430	5.71	4.94	0.77

TABLE 16B. Cohort Working Life Table for Males entering the Labour Force of Canada in 1971 (or Born in 1956)

Hypothesis A

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
<i>xt</i>	<i>1,000 A<sub>xt</sub></i>	<i>1,000 Q<sup>s</sup><sub>xt</sub></i>	<i>1,000 Q<sup>d</sup><sub>xt</sub></i>	<i>1,000 Q<sup>r</sup><sub>xt</sub></i>
15 years . . . . .	54.90	0.93	0.93	—
16 “ . . . . .	107.88	1.18	1.18	—
17 “ . . . . .	147.78	1.49	1.49	—
18 “ . . . . .	146.75	1.72	1.72	—
19 “ . . . . .	108.81	1.75	1.75	—
20 “ . . . . .	86.86	1.82	1.82	—
21 “ . . . . .	71.88	1.82	1.82	—
22 “ . . . . .	58.90	1.79	1.79	—
23 “ . . . . .	45.92	1.77	1.77	—
24 “ . . . . .	33.95	1.83	1.83	—
25 “ . . . . .	24.96	1.89	1.89	—
26 “ . . . . .	13.99	1.76	1.76	—
27 “ . . . . .	3.00	1.56	1.56	—
28 “ . . . . .	3.00	1.45	1.45	—
29 “ . . . . .	2.00	1.51	1.51	—
30 “ . . . . .	1.00	1.56	1.56	—
31 “ . . . . .	—	1.60	1.60	—
32 “ . . . . .	—	1.64	1.64	—
33 “ . . . . .	—	2.77	1.72	1.05
34 “ . . . . .	—	2.88	1.83	1.05
35-39 years . . . . .	—	3.36	2.31	1.05
40-44 “ . . . . .	—	5.49	3.58	1.91
45-49 “ . . . . .	—	8.94	5.73	3.21
50-54 “ . . . . .	—	15.33	8.99	6.35
55-59 “ . . . . .	—	30.01	13.78	16.23
60-64 “ . . . . .	—	117.11	20.54	96.58
65-69 “ . . . . .	—	137.45	30.99	106.46
70-74 “ . . . . .	—	148.31	45.72	102.59
75-79 “ . . . . .	—	156.89	66.70	90.20
80-84 “ . . . . .	—	166.71	100.73	65.97

Source: Based on Tables 15, 19 and methodology described in Chapter 4 and Appendix A.

TABLE 17 A. Cohort Working Life Table for Males entering the Labour Force  
of Canada in 1971 (or Born in 1956)

Hypothesis B

Age	Labour force per 1,000 population	Number of persons alive who were x years old at last birthday (assuming 100,000 live births per year)		Average number of years remaining to persons in the labour force at exact age x		
		In the population	In the labour force	Years of life	Years of labour force activity	Years of retirement
<i>xt</i>	<i>1,000 wxt</i>	<i>lxt</i>	<i>Lwxt</i>	<i>e<sup>o</sup> xt</i>	<i>e<sup>o</sup> wxt</i>	<i>e<sup>o</sup> rxt</i>
15 years . . . . .	39	95,379	3,720	57.39	46.53	10.86
16 " . . . . .	94	95,290	8,957	56.49	45.57	10.92
17 " . . . . .	202	95,178	19,226	54.62	44.62	10.00
18 " . . . . .	350	95,036	33,263	54.62	43.68	10.94
19 " . . . . .	497	94,873	47,152	53.66	42.75	10.91
20 " . . . . .	606	94,707	57,392	52.77	41.82	10.95
21 " . . . . .	653	94,535	61,731	51.87	40.90	10.97
22 " . . . . .	697	94,363	65,771	50.96	39.97	10.99
23 " . . . . .	738	94,194	69,515	50.06	39.04	11.02
24 " . . . . .	775	94,027	72,871	49.14	38.11	11.03
25 " . . . . .	809	93,855	75,929	48.26	37.18	11.08
26 " . . . . .	841	93,678	78,783	47.28	36.25	11.03
27 " . . . . .	871	93,513	81,450	46.44	35.31	11.13
28 " . . . . .	897	93,367	83,750	45.45	34.37	11.08
29 " . . . . .	924	93,232	86,146	44.58	33.42	11.16
30 " . . . . .	950	93,091	88,436	43.62	32.47	11.15
31 " . . . . .	949	92,946	88,206	42.67	31.52	11.15
32 " . . . . .	948	92,797	87,972	41.75	30.57	11.18
33 " . . . . .	947	92,645	87,735	40.80	29.76	11.04
34 " . . . . .	946	92,486	87,492	39.89	28.84	11.05
35 " . . . . .	945	92,317	87,240	38.95	27.92	11.03
36 " . . . . .	944	92,135	86,975	38.02	27.00	11.02
37 " . . . . .	943	91,941	86,700	37.10	26.08	11.02
38 " . . . . .	942	91,731	86,411	36.18	25.16	11.02
39 " . . . . .	941	91,504	86,105	35.26	24.25	11.01
40 " . . . . .	940	91,256	85,781	34.35	23.34	11.01
41 " . . . . .	939	90,982	85,432	33.45	22.43	11.02
42 " . . . . .	938	90,686	85,063	32.55	21.52	11.03
43 " . . . . .	937	90,366	84,673	31.64	20.61	11.03
44 " . . . . .	935	90,017	84,166	30.80	19.72	11.08
45 " . . . . .	933	89,632	83,627	29.90	18.84	11.06
46 " . . . . .	931	89,210	83,054	29.04	17.96	11.08
47 " . . . . .	928	88,747	82,357	28.17	17.09	11.08
48 " . . . . .	926	88,243	81,713	27.33	16.23	11.10
49 " . . . . .	923	87,692	80,940	26.48	15.37	11.11

TABLE 17 A. Cohort Working Life Table for Males entering the Labour Force  
of Canada in 1971 (or Born in 1956) – Concluded  
Hypothesis B

Age	Labour force per 1,000 population	Number of persons alive who were $x$ years old at last birthday (assuming 100,000 live births per year)		Average number of years remaining to persons in the labour force at exact age $x$		
		In the population	In the labour force	Years of life	Years of labour force activity	Years of retirement
$xt$	$1,000\ wxt$	$lxt$	$Lwxt$	$e^{\circ}xt$	$e^{\circ}wxt$	$e^{\circ}rxt$
50 years . . . . .	921	87,090	80,210	25.65	14.51	11.14
51 " . . . . .	911	86,434	78,741	24.85	13.70	11.15
52 " . . . . .	901	85,723	77,236	24.02	12.95	11.07
53 " . . . . .	891	84,957	75,697	23.24	12.20	11.04
54 " . . . . .	881	84,131	74,119	22.44	11.44	11.00
55 " . . . . .	871	83,234	72,497	21.67	10.68	11.00
56 " . . . . .	861	82,262	70,828	20.92	9.91	11.01
57 " . . . . .	851	81,218	69,117	20.16	9.14	11.02
58 " . . . . .	841	80,097	67,362	19.43	8.36	11.07
59 " . . . . .	831	78,894	65,561	18.70	7.57	11.13
60 " . . . . .	821	77,607	63,715	17.98	6.77	11.21
61 " . . . . .	765	76,236	58,321	17.31	6.12	11.19
62 " . . . . .	710	74,746	53,070	16.60	5.66	10.94
63 " . . . . .	654	73,121	47,821	15.96	5.20	10.76
64 " . . . . .	599	71,374	42,753	15.30	4.74	10.56
65 " . . . . .	337	69,541	23,435	14.67	5.19	9.48
66 " . . . . .	290	67,620	19,610	14.10	6.89	7.21
67 " . . . . .	253	65,590	16,594	13.46	7.11	6.35
68 " . . . . .	224	63,447	14,212	12.92	7.28	5.64
69 " . . . . .	200	61,201	12,240	12.31	7.40	4.91
70 " . . . . .	191	58,878	11,246	11.80	7.29	4.51
71 " . . . . .	177	56,487	9,998	11.25	7.00	4.25
72 " . . . . .	167	53,996	9,017	10.73	6.77	3.96
73 " . . . . .	156	51,396	8,018	10.21	6.50	3.71
74 " . . . . .	144	48,713	7,015	9.74	6.30	3.44
75 " . . . . .	129	45,987	5,932	9.23	6.23	3.00
76 " . . . . .	123	43,221	5,316	8.83	6.12	2.71
77 " . . . . .	115	40,426	4,649	8.32	5.84	2.48
78 " . . . . .	110	37,613	4,137	7.95	5.56	2.39
79 " . . . . .	100	34,791	3,479	7.46	5.33	2.13
80 " . . . . .	91	32,016	2,913	7.10	5.27	1.83
81 " . . . . .	83	29,347	2,436	6.66	5.20	1.46
82 " . . . . .	77	26,546	2,044	6.26	5.13	1.13
83 " . . . . .	71	23,521	1,670	5.92	5.08	0.84
84 " . . . . .	70	20,433	1,430	5.71	5.03	0.68



**TABLE 17 B. Cohort Working Life Table for Males entering the Labour Force of Canada in 1971 (or Born in 1956)**

Hypothesis B

Age	Labour force accession and separation rates			
	Accessions per 1,000 population	Separations per 1,000 labour force		
		All causes	Death	Retirement
<i>xt</i>	<i>1,000 Axt</i>	<i>1,000 Q<sup>s</sup>xt</i>	<i>1,000 Q<sup>d</sup>xt</i>	<i>1,000 Q<sup>r</sup>xt</i>
15 years . . . . .	54.90	0.93	0.93	—
16 “ . . . . .	107.88	1.18	1.18	—
17 “ . . . . .	147.78	1.49	1.49	—
18 “ . . . . .	146.75	1.72	1.72	—
19 “ . . . . .	108.81	1.75	1.75	—
20 “ . . . . .	46.92	1.82	1.82	—
21 “ . . . . .	43.93	1.82	1.82	—
22 “ . . . . .	40.93	1.79	1.79	—
23 “ . . . . .	36.95	1.77	1.77	—
24 “ . . . . .	33.95	1.83	1.83	—
25 “ . . . . .	31.94	1.89	1.89	—
26 “ . . . . .	29.96	1.76	1.76	—
27 “ . . . . .	26.97	1.56	1.56	—
28 “ . . . . .	26.97	1.45	1.45	—
29 “ . . . . .	25.97	1.51	1.51	—
30 “ . . . . .	—	1.56	1.56	—
31 “ . . . . .	—	1.60	1.60	—
32 “ . . . . .	—	1.64	1.64	—
33 “ . . . . .	—	2.77	1.72	1.06
34 “ . . . . .	—	2.88	1.83	1.06
35-39 years . . . . .	—	3.37	2.31	1.06
40-44 “ . . . . .	—	5.07	3.58	1.49
45-49 “ . . . . .	—	8.31	5.73	2.58
50-54 “ . . . . .	—	20.02	8.97	11.05
55-59 “ . . . . .	—	25.49	13.82	11.67
60-64 “ . . . . .	—	166.28	19.97	146.32
65-69 “ . . . . .	—	136.11	31.07	105.04
70-74 “ . . . . .	—	119.86	46.40	73.45
75-79 “ . . . . .	—	132.22	67.52	64.70
80-84 “ . . . . .	—	163.02	102.41	60.61



## COHORT LIFE TABLES

TABLE 18. Number of Survivors of 100,000 Born Alive ( $L_{xt}$ ), Males, Canada, by Year of Birth, 1931 to 1971

Age	$5 L_{xt}$				
	1971	1961	1951	1941	1931
0 years	100,000	100,000	100,000	100,000	100,000
1 "	98,049	97,034	95,890	93,631	89,498
5 "	97,735	96,590	95,198	92,226	87,412
10 "	97,496	96,345	94,838	91,608	86,599
15 "	97,297	96,075	94,575	91,248	85,986
20 "	96,705	95,474	93,959	90,674	85,278
25 "	95,768	94,529	93,116	89,934	84,485
30 "	95,048	93,794	92,386	89,225	83,796
35 "	94,316	93,057	91,647	88,492	83,122
40 "	93,319	92,050	90,635	87,511	82,195
45 "	91,817	90,518	89,077	85,989	80,726
50 "	89,452	88,121	86,655	83,596	78,430
55 "	85,826	84,428	83,094	79,862	74,876
60 "	80,660	79,109	76,052	74,383	69,553
65 "	73,195	71,469	70,046	66,605	61,907
70 "	62,882	60,978	57,833	56,053	51,565
75 "	50,295	48,433	47,089	43,902	39,965
80 "	35,597	34,060	31,341	30,479	27,479
85 "	1,484	20,352	19,668	17,853	15,956
90 + "	8,286	7,767	7,145	6,530	5,617
	$e^o_{xt}$				
0 years	71.06	69.81	68.36	65.84	61.65
1 "	71.47	70.95	70.28	69.31	67.87
5 "	67.70	67.26	66.78	66.34	65.44
10 "	62.85	62.45	62.02	61.77	61.03
15 "	57.98	57.60	57.19	57.00	56.44
20 "	53.32	52.94	52.54	52.34	51.89
25 "	48.81	48.44	48.00	47.75	47.35
30 "	44.16	43.80	43.35	43.11	42.72
35 "	39.48	39.13	38.68	38.45	38.05
40 "	34.88	34.53	34.08	33.85	33.44
45 "	30.41	30.07	29.63	29.40	29.00
50 "	26.14	25.81	25.39	25.17	24.78
55 "	22.13	21.83	21.37	21.22	20.83
60 "	18.38	18.12	18.12	17.59	17.22
65 "	14.99	14.78	14.46	14.34	14.03
70 "	12.03	11.88	11.98	11.56	11.33
75 "	9.40	9.29	9.14	9.05	8.88
80 "	7.24	7.16	7.48	6.93	6.78
85 "	5.40	5.34	5.44	5.12	4.97
90 + "	5.40	5.34	5.60	5.12	4.97

Source: Based on Table 19.

CATALOGUE

71-524E

OCCASIONAL

Working Life Tables for Males in Canada and Provinces, 1971

ERRATA

Page 137:	<u>Reads</u>	<u>Should read</u>
Age 0, year 1991 .....	982.2	1,148.9
Age 1-4, year 1991 .....	53.4	57.3
Age 0, year 1996 .....	744.1	1,148.9
Age 1-4, year 1996 .....	47.9	57.3
Age 0, year 2001 .....	506.0	1,148.9
Age 1-4, year 2001 .....	42.4	57.3
Source, line 3 .....	Section 6	Appendix B

8-1300-508





TABLE 19. Projected Death Rates by Age Groups for Males, Canada, 1976 to 2051

Age	1976	1981	1986	1991
	rate per 100,000 population			
0 years . . . . .	1,742.4	1,387.0	1,148.9	982.2
1 - 4 " . . . . .	72.8	62.8	57.3	53.4
5 - 9 " . . . . .	49.0	45.6	44.1	43.1
10 - 14 " . . . . .	43.3	40.8	39.9	39.3
15 - 19 " . . . . .	125.6	122.7	121.8	121.2
20 - 24 " . . . . .	196.6	198.9	198.8	198.7
25 - 29 " . . . . .	157.5	156.9	155.7	154.8
30 - 34 " . . . . .	162.4	160.6	158.6	157.2
35 - 39 " . . . . .	223.0	222.4	221.7	221.2
40 - 44 " . . . . .	350.5	350.7	350.5	350.3
45 - 49 " . . . . .	567.6	564.9	563.5	562.5
50 - 54 " . . . . .	931.9	926.2	923.0	920.8
55 - 59 " . . . . .	1,491.4	1,477.4	1,469.2	1,463.5
60 - 64 " . . . . .	2,329.8	2,321.2	2,321.2	2,321.2
65 - 69 " . . . . .	3,679.0	3,684.0	3,684.0	3,684.0
70 - 74 " . . . . .	5,189.6	5,175.8	5,175.8	5,175.8
75 - 79 " . . . . .	7,644.5	7,579.6	7,579.6	7,579.6
80 - 84 " . . . . .	11,356.3	11,177.9	11,177.9	11,177.9
85 + " . . . . .	21,083.4	21,059.3	21,059.3	21,059.3
	1996		2001	
			2051	
	rate per 100,000 population			
0 years . . . . .	744.1		506.0	
1 - 4 " . . . . .	47.9		42.4	
5 - 9 " . . . . .	41.6		40.2	
10 - 14 " . . . . .	38.4		37.5	
15 - 19 " . . . . .	120.3		119.4	
20 - 24 " . . . . .	198.5		198.4	
25 - 29 " . . . . .	153.6		152.3	
30 - 34 " . . . . .	155.2		153.2	
35 - 39 " . . . . .	220.5		219.8	
40 - 44 " . . . . .	350.1		349.8	
45 - 49 " . . . . .	561.0		559.6	
50 - 54 " . . . . .	917.6		914.4	
55 - 59 " . . . . .	1,455.3		1,447.1	
60 - 64 " . . . . .	2,321.2		2,321.2	
65 - 69 " . . . . .	3,684.0		3,684.0	
70 - 74 " . . . . .	5,175.8		5,175.8	
75 - 79 " . . . . .	7,579.6		7,579.6	
80 - 84 " . . . . .	11,177.9		11,177.9	
85 + " . . . . .	21,059.3		21,059.3	
			18,520.0	

Source: Based on K.S. Gnanasekaran, *Mortality Trends and Projections by Causes of Death in Canada, 1950 - 1990*, Harvard Actuarial Conference, Boston, 1973, p. 32; and assumptions stated in Section 6.





